Harvard Medical

ALUMNI BULLETIN AUTUMN 1998

"It is your time to lead"

Hillary Rodham Clinton

Class Day 1998

**Taylor, Sweet, Brown,
Snow, Bates, Teter, Fahl, MacLeod, Gorlin,
Angle, Fulton, Evarts, Connolly,
Vail, Mond**

The future's leaders, 50 years ago:

*the editorial staff of
the 1948 Aesculapiad*

Autumn 1998
Volume 72 Number 2

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Cover photo by Liza Green

Inside HMAB

The oath of the Class of 1998 (see page 13) sets a dauntingly high standard for physicians entering medicine at the end of its greatest century. The oath embodies an ideal much threatened by the emerging realities of the century to come. The promise to serve "all in need," taken literally, is impracticable in a nation without universal health insurance, let alone in a world of staggering economic inequalities and political turbulence. The sacredness of the bond between doctor and patient, the absoluteness of confidentiality in their communications, the primacy of the patient's dignity and autonomy—all of these are undermined by contractual obligations imposed on both parties by insurers and employers, and they are increasingly the target of legislation meant to regulate the ways people are born, give birth or prevent a birth, and die. Not all of these contracts or laws are bad things; they exist partly because the relationship between physician and patient cannot be isolated from economics or politics.

We could hardly ask for or even want to hear an oath that was properly hedged to take account of all the social and moral complexities of medical practice. We cannot imagine that the students drafting this oath were unaware of the ambiguities they did not address. Oaths must embody ideals and must be taken for oneself and not others. Yet they must also be understood as a commitment to goals that can only be achieved if we as a profession strive for them concertedly, not as soloists. The era of the soloist is past.

* * *

With this issue Ellen Barlow leaves her position as editor of the Bulletin. For eleven years, Ellen has both navigated and anchored this publication. Gordon Scannell '40 and I have been privileged in our association with an editor who has brought so much energy, professionalism, warmth, and imagination to the pages of HMAB. Ellen leaves us to pursue other journalistic and writing interests and to spend more time with the two delightful sons who were born during her tenure here. We will miss her steady hand and sharp eye, her generosity as a colleague, and her good humor.

William Ira Bennett '68

Harvard Medical
ALUMNI BULLETIN

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President's Report

by Robert S. Lawrence

The spring meeting of the Harvard Medical Alumni Council opened with a dinner meeting honoring Gerald S. Foster '51 for his 16 years of service as dean for admissions. Many who had served on the Admissions Committee under Gerry's leadership gathered for dinner at the downtown Harvard Club to honor his outstanding service to HMS and his leadership in selecting, from the thousands of qualified applicants, a series of classes unmatched in their diversity in the two centuries of Harvard medicine.

The theme of diversity was continued the next morning at the council meeting. William Silen, dean for faculty development and diversity, described the diversity programs at HMS and led the discussion of council members reporting on similar efforts at the University of Washington, Northwestern University, the University of Michigan and Johns Hopkins University. Common themes prevailed. Despite the dramatic improvement in the numbers and percentages of women and under-represented minorities entering medical school, senior faculty members remain disproportionately white and male. Although adequate numbers of women are joining faculties of medicine, many do not advance on the promotion ladder, in part owing to gender-based career obstacles for women, such as lack of mentoring, failure to provide faculty development assistance, reduced access to rewards such as salary, recognition and promotions. Dr. Silen described several elements of the HMS program in diversity designed to remove these obstacles. Faculty development and more effective mentoring are central to the program.

The paucity of under-represented minority faculty members appears to be a combination of inadequate numbers in the "pipeline," which may be the result of a lack of adequate role models, the financial incentives of clinical practice, and some of the same barriers identified as gender-based career obstacles for women. Dean Joseph Martin affirmed the importance of the diversity program.

Discussion then turned to the challenge of global diversity and the opportunities at HMS for learning about international health. Guillermo Sanchez '49 and Guillermo Herrera '57 joined the council for a discussion of programs outside the United States. About 25 students a year are involved in overseas research projects. Another 35 students participated last year in community service projects and clinical experiences. All told more than 40 countries have hosted Harvard medical students. Reciprocally, 89 students from 35 countries studied during the past year at HMS. This created an arena in which students could share their broad range of perceptions about health and disease and cultural values, in addition to their approaches to diagnosis and management of clinical problems.

Since 1971, Dr. Herrera's course, Medicine 518, has provided about 400 fourth-year students with intensive Spanish language instruction followed by a two-month clerkship in Guatemala, Colombia, Bolivia, Venezuela, Ecuador, Puerto Rico or Texas. In evaluations, a high proportion of the students have said that the course was very important to their education as a physician; it shaped their attitudes towards work with under-privileged populations, and increased their "cultural competence."

As HMS prepares for the next century of leadership in medicine, I believe that the initiatives described above will grow in importance: recruiting for diversity, educating for diversity, and appointing and promoting for diversity. Much has been accomplished, and the alumni can and must provide counsel and financial support to help create an institution that fully reflects our diverse nation.

Robert S. Lawrence '64 is an internist, and professor and associate dean for professional education, Johns Hopkins School of Hygiene and Public Health.

Pulse

New Clinical Dean

"This is a great age for clinical research, with exciting opportunities to better understand the fundamental nature of disease and then translate these advances into genuine benefits for our patients,"said Raphael Dolin '67, a leading expert on viral infections. "And Harvard is a great place to make this happen."

Dolin has been appointed faculty dean for clinical programs by HMS Dean Joseph B. Martin. Currently the chair of medicine at the University of Rochester and physician-in-chief at Strong Memorial Hospital, Dolin will begin his new role mid-September.

The new appointment is in response to a decision by Richard Kitz, the current faculty dean for clinical affairs, to step down from the position that he held half time since 1994. In an expanded role Dolin will handle a portfolio broadened in large part by the launching of an extensive clinical trials program by HMS and its major affiliates.

The clinical trials effort has been under discussion for nearly a year and was approved to begin a business planning phase by the administrative and medical leadership of Partners, CareGroup, Dana-Farber, Children's Hospital and Harvard Pilgrim. The program, however, must pass several additional hurdles to prove its feasibility and determine its scope. If given a go-ahead, it is expected to be up and running within a year.

Raphael Dolin

Dolin has extensive research and clinical experience in infectious diseases. Most recently he has focused on the development and clinical evaluation of HIV vaccines, and he hopes to continue that work here. His clinical appointment will be at Brigham and Women's, where he expects to have one clinic a week and will serve as professor of medicine.

Armenise-Harvard Researchers Speak International Language

While the Italian soccer team was competing for the World Cup in Paris, a meeting room on Cape Cod was crowded with 130 basic researchers, one third of them from Italy. In the front row sat Count Giovanni Auletta Armenise, flanked by Dean Joseph Martin and former dean Daniel Tosteson. Like everyone else, they watched mesmerized as a culture of epithelial cells, prodded by a dose of extracellular "scatter factors," sprouted branched processes as elaborate as deer antlers. The video was grainy, black and white, and only three minutes long. Yet for this group, it spoke an international language more compelling than sport.

The Second Annual Symposium of the Giovanni Armenise-Harvard Foundation, whose first program was held in Chatham on June 22 and 23, brought together foundation-sponsored investigators for two intense days of lectures, poster presentations, and networking. Sessions centered on neurobiology, cell membrane traffic, gene transcription, cell signaling and cycling, and plant defense and pathogenesis. Although each presentation was tightly focused and highly specialized, the underlying goal was always the same: to find patterns that hold true for different types of cells, tissues, and organisms.

For example, the scatter factors described by Paolo Comoglio, of the Institute for Cancer Research in Turin, are needed for development of many types of tissue. In mammalian embryos, they control branched morphogenesis—in which cells break away, migrate, become polarized, and form tubules—in normal tissues including nerve, muscle, blood vessels, and bone. Additionally, Comoglio's lab has demonstrated that certain point mutations in these specialized factors can transform healthy growth into malignancy, showing that they play a role in pathogenesis, as well.

In a presentation that helped explain the workings of whole organisms rather than tissues, Charles Weitz, assistant professor of neurobiology at HMS, described the molecular mechanisms of endogenous, self-sustaining clocks that have been found in everything from bacteria and fungi to plants, invertebrates, and humans. Only a year ago, researchers at Northwestern University identified the first mammalian circadian gene. Weitz and his HMS colleagues have since found that this gene's protein, CLOCK, forms a heterodimer with a second protein, BMAL1, to turn on a well-known circadian gene called *per*.

Further experiments indicate that teamwork is the key. Together, CLOCK and BMAL1 have 10 to 15 times the transcription activity of either protein acting alone. Now that it is clear that these two proteins turn on *per*, Weitz said, the next challenge is to figure out what turns the gene off during normal circadian rhythms.

Speakers at a session on plant defense and pathogenesis took an even broader view, blurring traditional boundaries by demonstrating that the animal and plant kingdoms are more

Count Giovanni Auletta Armenise

alike, in at least some regards, than previously thought. Frederick Ausubel, professor of genetics at HMS and MGH, described how novel pathogens made in his lab can cause disease in certain model plants, flies, nematodes and mice. Strains that are especially virulent in plants, Ausubel said, are often even more pathogenic in animals. Felice Cervone and Giulia De Lorenzo, plant biologists from the University of Rome, made the case that plants, like animals, readily identify nonself molecules that may pose a threat to them. The scientists are investigating a family of proteins that appear to have immunologic functions in plants.

At HMS, the Armenise-Harvard science centers are in cell signal transduction, directed by Marc Kirschner; structural biology, directed by Stephen Harrison; neurobiology, directed by Gerald Fischbach; and human cancer viruses, directed by Peter Howley '72. Programs in plant biology are directed by Frederick Ausubel at MGH.

Patricia Thomas

A Recommitment to Diversity

A celebration of 30 years of affirmative action at HMS and HSDM begins this fall with a series of programs reviewing the history of diversity at HMS. The first event will take place on Friday, October 2, with an opening reception in the MEC atrium from 4:00 to 4:30 followed by presentations in the amphitheater by President Neil Rudenstine, Dean Joseph B. Martin, and Donnella Green (MD/PhD candidate/HMS '99).

The discussion will focus on present accomplishments, future goals and the strong committment of HMS to diversity.

The second event will take place on December 11. Everyone is welcome to attend the series. For more information call 432-2159 or 432-0469.

Cell Death Research Adds Life to Theory and Practice

by Gabrielle Strobel

Probing Caspase Proteins

It may seem almost countercultural that altruistic behavior should so strongly capture the imagination of researchers in a society that rewards go-getters—scientific and otherwise—more amply than quiet helpers.

But so it is. Since the early '90s, when biologists began to realize that in species after species, cells routinely kill themselves for the greater good of the organism, scientists have been rushing into the young field of programmed cell death, or apoptosis.

The basic research on this fundamental phenomenon is now focusing on the caspase family of proteases, the proteins pivotal to apoptosis in all tissues studied so far. It is advancing so quickly that scientists at Harvard and elsewhere have moved from vaguely implicating apoptosis in disease to studying the mechanisms at work in specific examples and to testing early treatment approaches in animals (see the accompanying story on stroke).

"Apoptosis is important in a variety of diseases," says Junying Yuan, HMS associate professor of cell biology. Yuan opened the field to genetic studies with her description, in 1993, of a worm gene and its homology to a mammalian gene that became the first member of the caspase family. Since then, "Junying's many seminal discoveries have had a tremendous impact on the field," says Rajiv Ratan, assistant professor of neurology at Beth Israel Deaconess Medical Center (BID). Ratan, who directs the Neuroprotection Lab at BID, is one of several Harvard researchers studying the molecular pathways through which apoptosis contributes to Alzheimer's and Lou Gehrig's diseases, multiple sclerosis, and aging.

Junying Yuan

Mechanisms of Cell Death

A major push in Yuan's lab is trying to find out how "triple repeats"—three-letter units of DNA that are mysteriously repeated as if in a stutter—might interact with the apoptosis machinery in a group of diseases that includes Huntington's and fragile X syndrome, a form of mental retardation.

Researchers in the field spent the past five years working out the signal transduction pathways by which a cell interprets signs of stress in its environment and, once it has "decided" to self-destruct, dismantles itself, leaving behind remnants that are quietly engulfed by its neighbors.

In a review in *Genes and Development*, Yuan and a co-author assemble these studies into a web of molecular interactions underlying apoptosis. This web is replete with feedback and crosstalk between otherwise linear chains of communication. Yet some common themes emerge.

For example, nature was at once opulent and frugal in designing apoptosis. A panoply of insults can trigger cell suicide, among them free radicals, the dried-up supply of a growth factor needed to sustain a neuron, or oxygen levels depleted by a stroke. Yet these diverse signals soon converge on the caspases, a single family of proteases that acts at several stages along the cell's tightly controlled road to self-destruction.

Caspase Behavior

Yuan divides the caspases into instigators and executors. Some caspases incite cell death by splitting themselves into two activated fragments, which in turn activate other, downstream caspases. The ensuing cascade of protein cleavage and signal amplification resembles the way the immune system's complement proteins spring into action. Finally, when the cell has exhausted all checks and balances, caspases assist in taking it apart.

These multifarious functions of one protein family have inspired the curiosity of other researchers studying complex protein-protein interactions, which will be key to a true understanding of how caspases work. For example, Gerhard Wagner, the Elkan Blout Professor of Biological Chemistry and Molecular Pharmacology at HMS, is elucidating the molecular structure of one component of an apoptosis cascade.

So far, scientists have discovered 12 caspases, several of which they hope will make good targets for future drugs. The challenge now, says Yuan, is teasing out each caspase's particular function in specific tissues and its roles in disease.

Blocking Caspases: Damage Control in Stroke

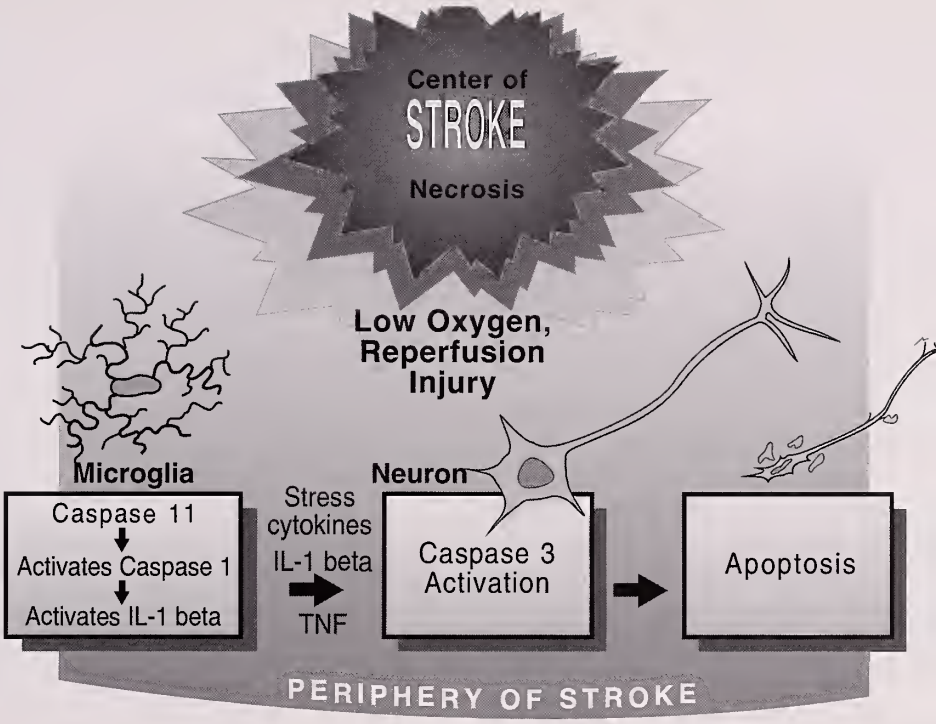
Buoyed by a recent flurry of findings about the genetics of cell suicide, Michael Moskowitz and Junying Yuan are among the Harvard researchers applying these insights to the study and experimental treatments of ischemic stroke, the catastrophic "brain attack" brought on by a blood clot.

A report in the May 15 *Journal of Neuroscience* is the latest in a string of papers describing two separate molecular pathways that bring into view a fairly complete picture of how caspase proteins exacerbate brain damage in the aftermath of a stroke.

Stroke is one of the world's biggest killers. The leading cause of death in Yuan's native China, it afflicts about 550,000 people annually in the United States, leaving in its wake 3 million current survivors who struggle with disability.

Stroke is also one of the most intractable medical problems. "There has long been an almost nihilistic attitude among physicians and patients that there is nothing you can do about stroke," says Moskowitz, HMS professor of neurology at Massachusetts General Hospital. That is slowly changing.

It is now clear that a stroke causes different types of cell death. Much like an earthquake, a stroke wreaks swift havoc around its epicenter, destroying cells in a process called necrosis. But farther away, the stroke's ripple effects cause cells to kill themselves by apoptosis. This slower process can take days, and it determines the extent of the ensuing brain damage.



The first pathway in stroke begins not in neurons themselves, but in microglial cells. It involves caspases 11 and 1. Yuan's and Moskowitz's labs collaborated to show, in two papers published last year, that inhibiting caspase 1 either genetically or with drugs prevents brain injury in a mouse model of ischemic stroke. In the February 29 *Cell*, Yuan's lab reports that caspase 11 is a key link upstream from caspase 1. Combined with previous work, this suggests that after a stroke, caspase 11 activates caspase 1, which in turn leads to the production of inflammatory cytokines. The microglia then die but, more importantly, they release these cytokines, which signal nearby neurons that the environment has turned noxious.

The cytokines may deliver the coup de grâce to neurons already reeling from insults related to the stroke, such as hypoxia, reperfusion injury, and an overstimulation of certain receptors. These neurons activate the second kind of apoptosis pathway known in stroke. In the *Journal of Neuroscience* paper, Moskowitz and his colleagues show that caspase 3 is present yet idle in the normal mouse brain but becomes cleaved into active fragments in the hours after ischemia. Its activity precedes by several hours the appearance of apoptosis. This study puts caspase 3 on the map as a probable mechanism of cell death specific to neurons, says Moskowitz, who directs the MGH program project on stroke. Funding for the work came from the NIH.

Michael Moskowitz

Promising New Drugs

Researchers now use commercially available caspase inhibitors, which have helped to confirm that blocking these proteins can, indeed, limit stroke damage in mice. In March, Moskowitz reported in the *Journal of Cerebral Blood Flow and Metabolism* that the inhibitors work best in milder ischemia, where there is less necrosis and apoptosis predominates. A report in press at the *British Journal of Pharmacology* further suggests that caspase inhibitors yield greater protection when used with other experimental drugs.

Book Mark

This implies that humans might eventually receive a kind of triple-drug therapy for stroke: one to bust the clot, one to limit the damaging overexcitation of receptors documented by other researchers, and one to avert apoptosis.

Much more work is needed, but one reassuring observation unites all caspase-blocking experiments done to date: the mice who received the treatment performed better than untreated mice in tests of sensory and motor function.

Initial human trials are still years away, says Moskowitz. One of several hurdles is that researchers need much more specific caspase inhibitors, ideally small, nonpeptide molecules that cross the blood-brain barrier. Last summer, a postdoctoral fellow in Yuan's lab started using the techniques offered by the Harvard Institute of Chemistry and Cell Biology to search for such compounds.

Gabrielle Strobel is a science writer in the HMS Office of Public Affairs.

THE SPIRIT CATCHES YOU AND YOU FALL DOWN: A HMONG CHILD, HER AMERICAN DOCTORS, AND THE COLLISION OF TWO CULTURES
by Anne Fadiman
Farrar, Straus and Giroux, 1997

by William Ira Bennett

At home the spirit catches you and you fall down. Then you go to the hospital, where doctors treat your epileptic seizure. The spirit responsible, a dab in the Hmong language, caught Lia Lee many, many times in her California home. Her seizures were also treated many, many times at the Merced Community Medical Center. Lia moved between these two worlds from the age of eight months until she was four, when she returned home for good—no longer epileptic because the worst seizure of her life, lasting almost two hours, rapidly led to one medical catastrophe after another, and she entered a permanent vegetative state.

This is the story line of Anne Fadiman's stunningly wonderful book about a Hmong family uprooted from their home in Laos in the aftermath of the Vietnam War, their American-born daughter Lia, the talented and dedicated physicians who cared for Lia, and the utter tragedy of everyone's good intentions as they sank into a gulf of mutual incomprehension.

Ms. Fadiman spent upwards of fifteen years doing the research for this book and writing it. After such a long time, her prose might well have become either disjointed or overwrought. But this book is seamlessly and transparently written. Indeed, I found the modesty of the writing deceptive when I first thumbed through the book. No sentence called attention to itself, and I worried that the text would become monotonous. It was nothing of the kind. I was in tears by the middle of the book and moved throughout. The power of *The Spirit Catches You...* is in the whole: in the author's gentle refusal to create villains where there weren't any, and in her ability to represent nearly every character, however minor, as a hero of his or her own life.

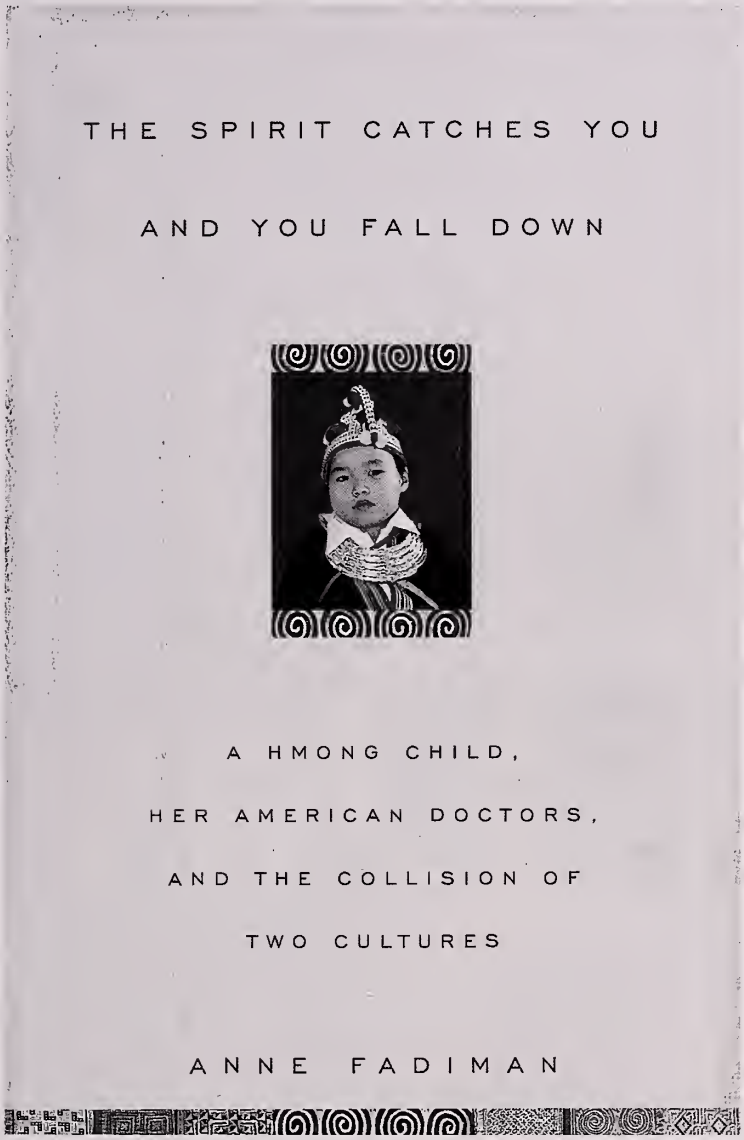
The crux of the matter was that Lia's parents came from a sturdy culture that has survived a diaspora of some two thousand years. During the Vietnam War, the Hmong, also called "montagnard" or "Meo," assisted the United States and its allies. After the war their lives in Laos became untenable, and the U.S. government grudgingly allowed some of its old allies to immigrate.

Lia's parents made it to America in 1980, two years before she was born. They knew no English. Their beliefs—for example in dab spirits that cause illness—still sustained the Lees as they had perhaps a hundred generations of their ancestors.

Lia's doctors were scions of a scientific medical culture that has existed for barely half a dozen generations but has acquired enormous authority because it can be so effective in curing or alleviating disease. Lia could not, however, be cured, and the regimens for controlling her seizures were at first so complicated that any parent, let alone recently arrived Hmong, would have been challenged by them.

The intractability of Lia's seizures nurtured the frustration and muttered recriminations of physicians and family. The Lees came to be seen as such bad parents that Lia was at one point removed from their custody. The Lees experienced Lia's doctors as all but murderous in their treatment of their child.

Yet the Lees tried very hard to reconcile their customs with the ethos of their new country. Lia was born in a



hospital, which her family allowed to keep her placenta despite the Hmong tradition requiring that it be ritually buried at home. After her first significant seizure, the parents brought Lia to the hospital, as they would hundreds of times over the next three years. They tried to follow the doctors' instructions. Once given a regimen they could understand and follow, they carried it out to the letter.

The night of Lia's last horrendous seizure, her blood valproate level was a perfect 101. During the years before that night, when status epilepticus led to aspiration, pneumonia, septic shock, and disseminated intravascular coagulation, the Lees were seen as at best benighted and at worst willfully noncompliant by the physicians who attended her. Since the day they were allowed to take Lia home to die, the Lees have kept her immaculately alive, despite her impaired gag and choke reflexes, and intensely loved, despite the emptiness of her eyes. And they have acquired the sorrowful respect of the physicians who were as powerless to save Lia as her parents were.

Lia's story, as Anne Fadiman tells it, is so compelling that reading it was, for me, like watching a movie, but the book is vastly richer than any dramatization could be. For a practicing physician, *The Spirit Catches You . . .* will resonate in myriad obvious and subtle ways. Even as I write, I must participate in a struggle between state agencies and an old-world family about how to care for a behaviorally-impaired young man. I cannot say that reading *The Spirit Catches You...* has made my task easier; it has certainly helped to keep me more alert and I hope more honest with myself than I might have been.

There are relatively few works that I, as a physician, both ought to read and also would want to read. This one comes, for me, at the very top of that list, somewhere in the company of Sinclair Lewis' *Arrowsmith* and William Carlos Williams' short story "The Use of Force."

William Ira Bennett '68 is a psychiatrist at McLean Hospital and editor-in-chief of the Bulletin.

Class Day

THE APPLAUSE WAS THUNDEROUS when Hillary Rodham Clinton walked into the tent arm in arm with Dean Joseph Martin, leading the Class of 1998. The tent on the Quadrangle was packed with 2,800 people, awaiting the First Lady's arrival by motorcade so the procession could begin. It was a Class Day with excitement like no other in recent history: television camera crews, photographers and reporters filled a side section of the tent; secret service men roamed the perimeters and were even stationed on the top of Building A.

But the real stars of the day were the 161 men and women of the Class of 1998. As co-moderator Allison Bryant '98 pointed out, this class "made history simply by walking through the front door of HMS." It is the first class to matriculate greater than 50 percent women and the first class in which ethnic minorities represented the majority. "We brought a host of cultures and and a wealth of experience. In past lives we were writers, dancers, bankers, ministers, scientists, lawyers—and even ordinary college seniors!"

And on June 4, along with their dental school colleagues, they became the doctors and dentists of the new millenium.

First the students had a chance to address their classmates, friends and families. Dental student Kelly A. Cook ended her speech with the quip: "I think DMD really means, done mom and dad!" Tokunbo 'Kemi Babagbemi, the oldest of nine children from Nigeria who came to the United States to seek education, spoke about being on call and how she came to terms with it. Encountering "call," she said, was like going through the stages of grief: denial, bargaining ("If I get all my work done, I won't have to stay up, will I?), depression, anger ("With all the advances in modern medicine, why has no one yet figured out how to entice babies to be born only between the hours of noon and 6 p.m."), and finally acceptance.

Anthony Lamar Mitchell, who became an ordained minister while in medical school, then spoke about what he really learned while in medical school. He started by quipping that "asking a baptist minister to speak is like asking the author of *Roots*, how's your family," but he did manage to keep his talk short. To be confident, competent and compassionate, he concluded, are the important things he learned.

First Lady Hillary Clinton impressed everyone by making a pithy reference to each of the preceding student speeches (without appearing to jot down any notes!). She in turn said she was impressed with the oath the class wrote, "a pathway to the future, a pathway for us all to follow." She spoke of the value of sustained investment in research by increasing the federal research budget and of the necessity of safeguarding the privacy of patients' medical records. There was talk about health care financing, Medicare, and the contributions made by academic health centers that are not part of the reiumbursement equation.

Yes, she admitted, she had been discouraged by the outcome of the health care reform effort, but said that the debate and the effort had been important for America. "As a nation we have to continue to work toward universal, affordable, quality health care for every single American," and then prodded the graduates to do their part as well. "It is going to be up to each of you to assume your place as one of the architects of this changing health care world. I'm afraid you can't

< The press converge on the Quad.

< But proud parents take just as many photos.

Stephanie Knott

Oath

just be bystanders or kibitzers because you have the information and the experience that all of us need."

After a standing ovation, co-moderators Allison Bryant and Samuel Somers presented her with a plaque that read: Thanks for visiting and enriching our village. And the dean escorted the First Lady away to her next engagement.

The students then presented their faculty awards. Orah Platt '73 was selected as best preclinical teacher and Gillian Lieberman as best clinical teacher. The NBI Healthcare Foundation Humanism in Medicine Award went to Charles Hatem '66. Moderator Somers then introduced the "faculty member who has had greatest impact on the Class of 1998": Gerald Foster '51, faculty associate dean for admissions. Foster, who is retiring this year after more than 30 years on the HMS admissions committee (16 of which he was chairman), was credited by the students as "the man literally without whom none of us would be sitting here today."

To borrow a line from Anthony Mitchell's speech, "At some point in time, we were smart enough to get into Harvard Medical School and obviously, as evidenced by today, we are smart enough to get out." After receiving their degrees, reading the oath, and letting out a cheer, these 161 new physicians were ready for the next phase of their careers.

DEAN:

Members of the Class of 1998, please rise.

I now invite you, as a class, to affirm your commitment to the profession of medicine or dentistry and to articulate the ideals and principles that will guide you in the years ahead.

of the Class of 1998

CLASS:

Today, in the presence of family, friends, teachers, and colleagues, I dedicate myself to the profession of Medicine.

I pledge myself to the service of humanity. I will use my skills to care for all in need, without bias and with openness of spirit.

The health of my patients will be my first concern.

I vow to hold sacred the bond between doctor and patient.

I will hold in confidence all that my patients entrust to me.

I will strive to alleviate suffering.

I will respect the dignity and autonomy of my patients in living and in dying.

As a Physician, I recognize my duty to society.

I will work to promote health and prevent disease. I will advocate for the welfare of my community.

Even under duress, I will not use my knowledge or my skills against humanity.

I will acknowledge my limitations and my mistakes so that I may learn from them.

To uphold these responsibilities, I will maintain my own well-being and the well-being of those close to me.

I will promote the integrity of the practice of Medicine.

In the tradition of my profession, I honor all who teach me this Art.

Through honest and respectful collaboration with my colleagues, I will uphold the highest standards in the service of patients.

I will seek new knowledge, reexamine ideas and practices of the past, and teach what I have learned.

Above all, the health of my patients will be my first concern.

This Oath I take freely and upon my honor.

THE FOLLOWING DEGREE RECIPIENTS GRADUATED WITH HONORS OR SPECIAL AWARDS:

Paula Brathwaite

Christiana Goh Bardon, magna cum laude
Henry Asbury Christian Award for notable scholarship in studies or research: *The Role of Cis-acting Elements in Regulating Accessibility of the TCR a/d Locus*

Jennifer Ruth Brown
James Tolbert Shipley Prize for excellence and accomplishment in research: *The Role of fos Family Genes in Adaptive Neuronal Responses and Cell Proliferation*

Ivan Cheng, cum laude
Expression of an Extracellular Calcium-sensing Receptor in Gastric Tissues

Jayanta Debnath, magna cum laude
Characterization of RLK/TXK, a Nonreceptor Protein Tyrosine Kinase Expressed in T Lymphocytes

James Michael Donahue, cum laude
Adoptive Transfer of the Anti-tumor Immunity Stimulated by GM-CSF Based Cancer Vaccines

Melinda Jean Fan, summa cum laude
Leon Reznick Memorial Prize for excellence and accomplishment in research: *Regulation of Spemann Organizer Formation in Xenopus Embryogenesis*

Joel Mitchell Gelfand, magna cum laude
The Effect of Ultraviolet B Phototherapy on HIV-1 RNA Plasma Viral Level: A Self-controlled Prospective Study

Heather Elizabeth Gibson, cum laude
Syndecan-1 Null Mice Develop Normally But Show Delayed Reepithelialization of Cutaneous Wounds

Julie Renee Gilbert, cum laude
Evolving Trends in Liver Transplantation at the Massachusetts General Hospital: An Outcome and Charge Analysis

Kirsten Greineder
Society for Academic Emergency Medicine Excellence in Emergency Medicine Award to a senior medical student who has demonstrated excellence in the specialty of emergency medicine.

Chi-Cheng Huang, cum laude
Characterization of the Health and Social Environment of the Street Children of La Paz, Bolivia

Edwin Kim Joe, cum laude
Regulation of Cardiac Myocyte Nucleotide Levels and Contractile Function by Inducible Nitric Oxide Synthase (iNOS): Mechanisms of Contractile Depression by Nitric Oxide

John Robinson Keltner, magna cum laude
PRESS Single Voxel Proton Nuclear Magnetic Resonance Spectral Editing for the Detection of Human Brain GABA and Rat Brain GABA, Glucose, and Lactate

Chiang Jia Li, magna cum laude
T Cell Pathology in HIV-1 Infection: A Priming Factor Model for the T Cell Loss and Persistent Viral Infection

Jennifer Williams Mack
Bemy Jelin '91 Prize to that senior who most demonstrates overall academic excellence with a career interest in pediatrics, oncology, international health or psychiatry.

Wells A. Messersmith
Kurt Isselbacher Prize to the senior demonstrating humanitarian values and dedication to science.

Vamsi Krishna Mootha, cum laude
Regulatory Control in Mitochondrial Energetics

Ethan Basch

Rinaa Sujata Punglia, cum laude
Regulation of Vascular Endothelial Growth Factor Expression by Insulin-like Growth Factor 1

Sonya Sunhi Shin
The Community Service Award to the senior who has done the most to exemplify and/or promote the spirit and practice of community service. Robert H. Ebert Prize for excellence and outstanding accomplishments in the field of primary care medicine. Rose Seegal Prize for the best paper on the relation of the medical profession to the community: *Community-based Treatment of Multidrug-resistant Tuberculosis in Lima, Peru*

Ann Chen

Kevin Adams Strauss
The New England Pediatric Society Prize to the senior who in the opinion of peers and faculty best exemplifies those qualities one looks for in a pediatrician.

Raymond Tabibiazar, cum laude
Axonal Regeneration in Goldfish Retinal Ganglion Cells: Trophic Factors and Downstream Events

Myrtha Cesar

Guillermo James Tearney, magna cum laude
Harold Lamport Biomedical Research Prize for the best paper reporting original research in the biomedical sciences: *Spectral Encoding for Confocal Microscopy*

Nana Amma Yeboaa Twum-Danso
The NBI Healthcare Foundation Humanism in Medicine Award to a graduating medical student who consistently demonstrates compassion and empathy in the delivery of care to patients.

Anne Elizabeth West
Dr. Sirgay Sanger Award for excellence and accomplishment in research, clinical investigation or scholarship in psychiatry: *Targeting of the Synaptic Vesicle Protein Synaptobrevin in the Axon of Cultured Hippocampal Neurons: Evidence for Two Distinct Sorting Steps*

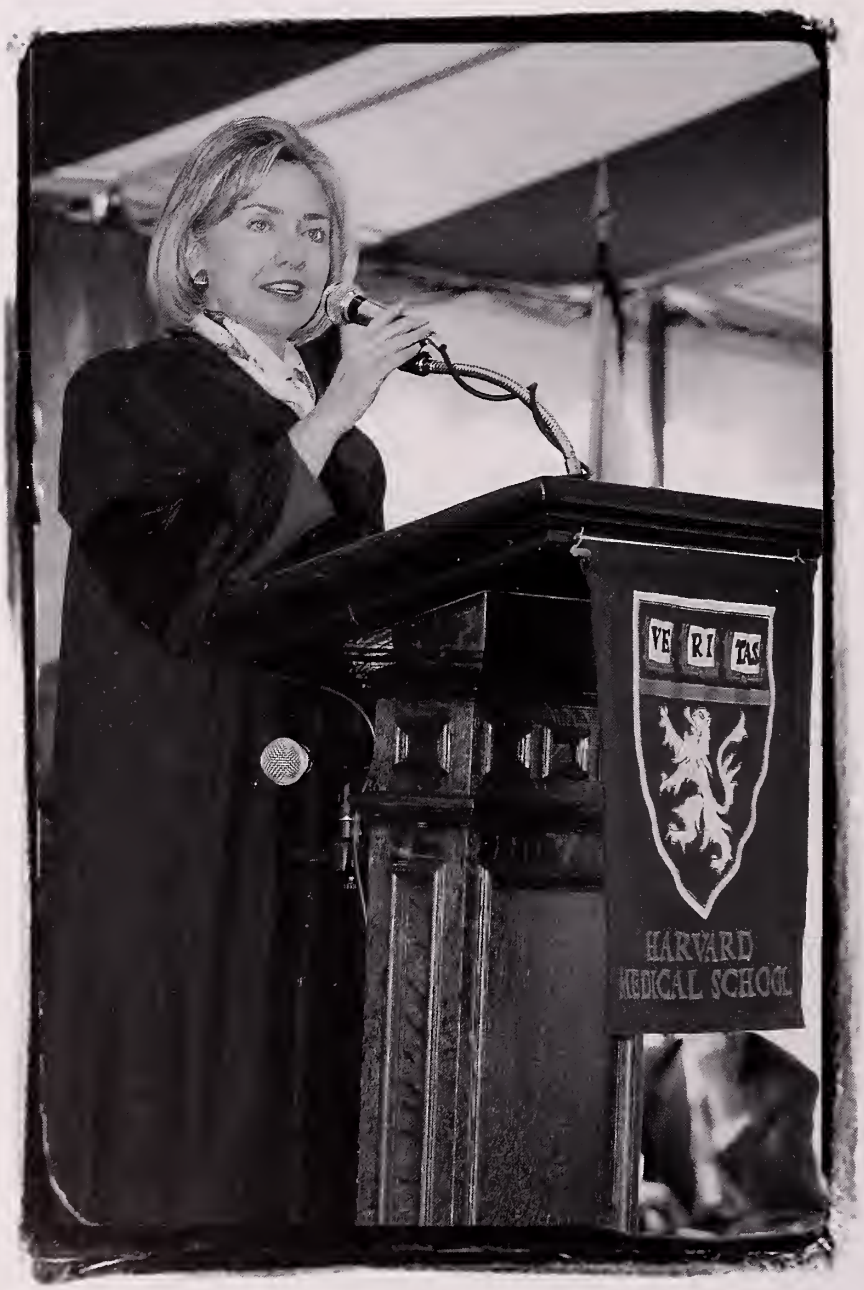
Patrick Noel Weybright, cum laude
Gradient, High-resolution, Magic Angle Spinning 1H-NMR Spectroscopy of Intact NIH 3T3 F442A Cells and Ex-vivo Human Liposarcoma Tissues for the Investigation of Adipocyte Differentiation

Christiana Goh Bardon, Paula Octavia Catherine Brathwaite, Charlene Antoinette Brown, Rev. Anthony Lamar Mitchell, and Victoria Angela McGhee Smith
The Multiculturalism Award to the senior in each Academic Society who has done the most to exemplify and/or promote the spirit and practice of multiculturalism and diversity.

Stephen Persell

Addressing the Future

by Hillary Rodham Clinton



I HAVE, AS YOU MIGHT EXPECT, attended numerous commencement ceremonies in my lifetime. And I must say I have never attended one where we've already heard so many good speeches. We could quit right now and feel that we had been in the presence of some extraordinary young people who imparted significant words of advice and even wisdom to us.

I want to commend the co-moderators, Dr. Bryant and Dr. Somers, for this commencement ceremony. And I want to thank the student speakers. I want to thank Dr. Cook for not only reminding us that it's done, Mom and Dad, but for showing extraordinary composure while speaking as a helicopter took off in the background. I want to thank Dr. Babagbemi for her eloquent description of being on call, but even more for her understanding of what the requirements are for one who has been blessed with the kind of education and gifts that she has on behalf of humanity. And I want to thank Dr. Mitchell for reminding us that in life it is competence and confidence and compassion that separate us as human beings from mere technicians.

Each of these student speakers has already set the stage for the graduation of this extraordinary class. This class comes with, I'm sure, a range of emotions that we can only guess at, exhilaration and exhaustion among them. But also, as we've already heard, a lot of gratitude for the opportunities they have been given. And they also deserve from us gratitude for undertaking the rigorous education that they have had, for pushing themselves to the limits, and now for going into the world ready to use their talents and their education on behalf of the rest of us.

They have made many sacrifices. More than 70 percent of this class had to take out loans to complete the degrees that they receive today. They will be paying back those loans for a number of years, and I hope that we as a nation will continue to look for ways to provide financial support to stu-

dents such as these so that they do not have to go into enormous debt.

Some of these graduates, these new doctors and dentists, are the first in their families to attend college. Some have completed their educations while caring for their own families. Some are recent immigrants to our country. More than 15 percent managed to earn additional degrees. And all of them have worked extremely hard. They deserve this celebration by family and friends, by alumni of these institutions who are gathered here to pay you credit. And I hope that each of you feels the competence and the confidence that you've already heard described, because I can imagine that as you think about your new futures, you've got some questions in your mind. You're thinking about the next chapters of your lives.

Now, I don't think the food wherever you're going will be as good as the restaurants on Newbury Street. The sleeping accommodations are not going to be exactly five-star ones. You know where you're going. It's called internship or specialty training. And as we've already heard, that means a lot of hard work and not very much sleep. And some of you in the dark of night, when those beepers go off or those phone calls come, may ask yourselves, "My goodness, am I ready for all of this?" Based on what I have learned about your class and your preparation, I think the answer is very clear—you certainly are. You are more than prepared to enter the world of medicine and dentistry and serve your patients.

I was very impressed by the oath that the class has written. That oath describes what this class of extraordinary young men and women are committing themselves to doing. No group of new doctors and dentists has ever been better prepared to care for their patients. No group has ever been better prepared to help us usher in the next century, the next millennium of medicine. From the clinic to the classroom to the community, you have received a first-rate education from one of the finest schools in the world.

We've already heard about the extraordinary diversity in your class. If you think back for a minute a hundred or so years ago to classes that also stood on the brink of a new century and new discoveries, you can see starkly the differences. The doors of medical education were virtually glued shut to women and people of color. Tuition here at Harvard was a couple of hundred dollars and you didn't even need a bachelor's degree to get into Harvard Medical School. Until the 1870s, there were no written exams. And, in fact, when President Elliott first suggested them there was an objection because many of the students couldn't write.

Yet like you, the students at the end of the last century had much to look forward to. When Oliver Wendell Holmes spoke at the 100th anniversary of Harvard Medical School, he referred to some things that never change, such as students sleeping in class. He noted that bleeding had almost become an unknown procedure, and he celebrated the exciting advances in surgical anesthesia, germ theory and the microscope. He thought they would produce miracles that sounded as though they would come straight from some new *Gulliver's Travels.*

That day he talked, future physicians such as you were staring down challenges like cholera and typhoid. There were no antibiotics, no antiseptic surgery in America. The sanitation conditions were horrible. But those young doctors and dentists, like you, were armed with something very important called hope. The hope that they could write a new future for medicine in the twentieth century, and they did.

Today, all of you stand on the shoulders of those Harvard graduates and faculty who have come before you and pioneered many of the advances that we now take for granted. You stand on the shoulders of all the Nobel laureates from Harvard who have unlocked the secrets behind some of the world's greatest medical mysteries. And even today, there are so many Harvard alumni here in the United States and around the world who are working to unlock the secrets of cancer and research into sickle cell disease, working to rid the world of AIDS, and doing so much else.

Now it is your turn to join them. It is your time to lead. You've been given the chance to use your education and training during the most exciting time ever in medicine.

Just think, who could have imagined even 30 years ago the revolutions in biology and technology, the changes in demographics, and the shifts in the way that we fund the health care system. All of these changes offer incredible opportunities and fundamental challenges. The real challenge for all of you, it seems to me, is how in the midst of these truly revolutionary changes you can stay true to the oath you will take today to make, as you say, "the health of my patients my first concern."

I know that many of you worry about this. I imagine there have been

many conversations about what is happening in the health care system and how you will handle these new challenges, how you will manage the business of medicine without compromising the profession of medicine, how you will keep sacred the bond between patient and doctor, and patient and dentist.

In that extraordinary oath you've written I think that there is a pathway to the future, a pathway that is not only one for you to follow, but for all of us physicians and dentists and lay people as well. When you pledge today to promote health and prevent disease, you do so at a time when there are extraordinary breakthroughs. You know all about them: treatments for strokes and AIDS, the potential to slow diseases like Alzheimer's, computer technology allowing you to share life-saving information in real time, and the mapping of the human genome, which is revealing evolutionary secrets as we discover genes linked to breast cancer, colon cancer and Parkinson's disease.

And yet, with all of these breakthroughs come some questions that each of us, and particularly each of you, will have to address. For example, these kinds of advances don't just happen by accident or overnight. They are the result of sustained investments in research, especially in basic science.

That is why we all have a stake in supporting the President's proposal for a twenty-first-century research fund to increase our federal research budget at NIH to historic levels. We should be increasing our budget at NIH as much as we can, at least by 50 percent over the next five years. That would give us the kind of investment that would enable you and your colleagues in the sciences to make these breakthroughs real in the lives of your patients. I hope that all of us will make clear that the United States must continue to be a leader in basic research and biomedical research, and that the United States government must, at this point in our history, make the kind of significant

Harvey Greisman and son

commitment that will enable us to move forward on the fronts that many of you will work on either in the research labs or in your practices.

These continuing advancements in research and treatment also challenge us to ensure that our ethics keep pace with our science. We've all heard stories about people who are avoiding critical tests that their doctors recommend, or refusing to use their insurance out of fear that they will be discriminated against or have their privacy violated. It will do us little good to discover genes that cause breast cancer or colon cancer if people are afraid to be tested for them because they worry that the information will cause them to lose their job or their insurance.

You should be able to look your patients in the eye and say "'information about your genes will be used to heal you, not deny you a job or affordable health insurance." The President has asked Congress to pass legislation

prohibiting the use of genetic-screening information to discriminate in health insurance and employment. The Congress should act to end genetic discrimination now.

You should be able to guarantee your patients the privacy of their medical records. At a time when personal health information is electronically criss-crossing the country, moving among health plans, insurance companies, and employers with fewer federal safeguards than the records of your video rentals, we must pass a law safeguarding the medical records and information of every American.

When you take your oath and you pledge to respect the dignity and autonomy of your patients in living and in dying, you make that promise in a world of rapidly changing demographics. Baby boomers like me are graying. Americans are living longer with less disability. Now that is good news. It is what my husband likes to call a high-class problem.

But, as with any nation whose population is aging, we face tough questions about how we will provide and finance health care for this expanding group of older citizens. Think back. Before Medicare was enacted, almost 50 percent of older Americans went without health insurance. They found themselves often mired in poverty and chronic illness. People used to work their entire lives only to enter their later years facing unthinkable choices between paying their heating bills and their medical bills.

We hear a lot of talk about what's wrong with government, but we

shouldn't forget about what we have done right. Medicare forever changed what it means to grow old in this country and we have to make sure that it is there for generations to come. But Medicare, like any program in the public or the private sector, must adapt to a new world. The President worked in a bipartisan fashion to extend the life of the trust fund as part of the Balanced Budget Act of 1997. And the changes in Medicare included not only an extension of its life, but more health plan choices and treatment options, and new prevention benefits such as yearly mammograms, colorectal screening, and diabetes self-management.

There is now a consensus between Republicans and Democrats that we have to address the long-term future of Medicare together. This should not be a partisan issue. Therefore, the President and Congress have appointed a National Bipartisan Commission on the Future of Medicare that is scheduled to report in 1999. And I hope that during the process of its deliberations and certainly in reaction to its report that all of you and all of your colleagues will make sure your voices are heard becaue we have to ensure that whatever changes are made are made in the best interest of patients.

You will dedicate yourself to the profession of medicine and dentistry at a time when revolutions in our own health care delivery system are blurring the lines among payers, providers and insurers. There are more than 160 million people enrolled in managed care plans, an increase of 75 percent just since 1990. More physicians are forming their own health plans and working to find new ways to share risks and control costs.

There is, however, another responsibility. And that is to ensure that these new forms of care do not mean substandard care. The bottom line of profits never eclipses the bottom line of good medicine.

Think about a recent statistic that came from a survey I read: 60 percent of Americans say they are worried that if they were sick their health plans would be more concerned about saving money than giving them the best treatment. Physicians have been on the front lines arguing against these changes in the delivery of health care. Physicians have been standing up for patients who have been denied treatments that were recommended by their doctors. Physicians have spent countless hours on telephones arguing with insurers to try to make sure that a patient got the care that the physician thought necessary. We have to work to make it absolutely clear that it should be the medical professional who determines treatment options, not a checklist administered from some office thousands of miles away.

Whatever kind of insurance plan Americans have, they should feel they will get quality care. What better place to make that pledge than at this graduation. Dr. Mitchell Rabkin introduced the first Patient's Bill of Rights here at a Harvard hospital. Patients should never have to beg and plead to see a specialist they need. When an emergency arises they should get care whenever and wherever they need it. They should have the right to a fast and fair appeal when they or their physician disagree with decisions about their care. Congress should pass a Patient's Bill of Rights to protect every American and pass it this year.

One of the most serious and unintended consequences of the changes in the financing and delivery of health care in America is the effect on academic health centers like this one. You have seen first-hand in your training what happens when new market forces squeeze academic health centers. You have also been part of establishing some good models here in Boston for managed care plans joining forces with teaching hospitals.

But the problem is not just the concern of Harvard or Harvard's graduates. It should be the concern of every American. Just stop and think for a

minute what our academic health centers have meant to each and every one of us.

Academic health centers have many missions. Three of them, in particular, have helped to make American health care the best in the world. The research mission of the academic health center has not been replicated anywhere else and could not be. We are all grateful for the extraordinary breakthroughs in research that have happened in the labs and clinics of academic health centers. The mission of training young doctors, dentists, nurses, and other health care professionals is also the province of the academic health center. And finally, for care of the most vulnerable—whether they are vulnerable because they are so poor and disadvantaged or because they are so sick and hopeless—the academic health center has been there as a place of last refuge.

Now those three missions—research, education and training, and uncompensated care for the vulnerable—are not profitable missions. You rarely can make any money at all in the short-run and even the medium-run in research. And you certainly cannot make money off training young physicians or dentists. And you lose money when you open your doors to the most vulnerable.

Yet, in this brave new world of HMOs and health care agencies that look to the bottom line, many academic health centers are being told, "I'm sorry, we're not reimbursing you for functions that are not directly related to the patient care activities listed in our brochure. So you will not receive compensation for research, education, training. And you're just going to have to send those poor patients somewhere else."

What that attitude fails to recognize is that the reason American health care is so good is because we've had the best research, education and training opportunities available in the world. If we squeeze out those functions, if we force places like Harvard to cut back on what they do best, then it is not only Harvard that will suffer. It is hospitals and patients throughout the world.

It is time for us to recognize that paying for those academic health centers and their vital missions is in the best interest of us all. Historically, Medicare has borne a great deal of the cost, paying directly and indirectly for graduate medical education. We should do everything possible to continue Medicare and the federal government's commitment to academic health centers. But I believe it is also fair and appropriate for every health plan and every insurance policy to pay something toward the maintenance of our academic health centers. We all benefit from the work they do on our behalf.

This is not one of those abstract debates that should only take place in Washington behind closed doors. It should be brought out into the light of day. And those of you on the front lines of delivering high quality medicine, doing cutting-edge research, and caring for the poorest and the sickest among us should make sure your voices are heard.

All of these issues were part of the overall plan that was presented a few years ago to reform our nation's health care system. Now clearly that particular proposal was not successful, but it is critical that we do not give up on what must still be done. Many people ask me, "Were you discouraged after the defeat of health care reform?" Well, yes, I was discouraged we didn't have the kind of debate that we should have had in Congress so that people in the country could have seen clearly what our true choices were.

But I also believe that the debate and the effort was very important for America. We did educate ourselves about many of the issues that you here at Harvard know so well. And we also learned that when the political environment makes it impossible to take large steps in a direction you believe you must go, then you have either the choice of taking smaller steps or sitting on the sidelines and doing nothing. I come from the school of smaller steps. It is far better to try to make changes that will help at least some people than to do nothing and help no one.

We've seen some progress since 1994. Thanks, for example, to the leadership of Senator Kennedy here in Massachusetts, the Congress passed a bill prohibiting the loss of health insurance just because of a pre-existing condition or the loss of a job. There are problems with the implementation of that provision, but it is still an important step, and it makes clear that we are moving toward ensuring that people are not wrongfully deprived of their access to health insurance. We've also seen major legislation, the most significant since 1965, making access to health insurance possible for uninsured children.

But our job is far from done. We

have 41 million people living without health insurance. Who will take care of these people in the future? Who will ensure that they will be taken care of? How will we pay for their care? And how will we pay for the extra costs that come when someone is not treated for a chronic disease or is turned away from the emergency room? The job of health care reform in America cannot be done when any of our citizens' access to care depends on the color of their skin, or the neighborhood they live in, or the amount of money in their wallet.

Let's be clear. As a nation, we have to continue to work toward universal, affordable, quality health care for every single American. While all of us must continue to work toward that day and we will do our part, it is going to be up to each of you to assume your place as one of the architects of this changing health care world. I'm afraid you can't just be bystanders or kibitzers because you have the information and the experience that all of us need.

About 100 years ago, one of your predecessors said, "We are very glad to be in the Class of 1900 and not 1800, because we confidently believe we shall all witness greater triumphs in the century now dawning." I hope each of you feels the same. And I trust that in 100 years when your successors look back at the Class of 1998, they will say that given the opportunity you went far beyond the instructions to do no harm. Instead, you worked in the service of your patients and humanity. You worked to improve the system in which you care for your patients.

I hope also that we'll be able to look back and see that just as medicine conquered bacteria in the twentieth century, that the twenty-first will see the defeat of viruses; that chronic illness will be cured or tamed; and that so many of the diseases around the world will finally be put at bay that our grandchildren will have to look in history books to learn about the devastation of cancer or AIDS. During a time of great change there is always uncertainty about which direction each of us individually will go and which direction collectively we will choose. We are at such a point in our health care system. You are at such a point in your lives.

I am extraordinarily hopeful as I look out at you graduates, that the decisions that have to be made will be made with your guidance and expertise, and that the oath that you take today will be fulfilled. Because after all, it is you who must ensure that above all the health of your patients will be your first concern.

We need your competence and your confidence. We need your compassion. And we need your voices to ensure that what you know, what you see, what you experience cannot be ignored as our nation debates what direction we take. I'm confident that if we follow your oath, we will make the right decisions. Congratulations, good luck, and God speed.

Hillary Rodham Clinton is First Lady of the United States.

On Call

by 'Kemi Tokunbo Babagbemi

Student speakers 'Kemi Tokumbo Babagbemi, Anthony Mitchell, and co-moderators Samuel Somers and Allison Bryant

AS WE SIT HERE TODAY, I WOULD LIKE you to think back to the day you first became aware of the concept of call. As for me, I heard about call rather late—at the end of second year.

Rumor had it that medical students were being required to stay awake for 36 hours to take care of patients, and then they were being asked to present facts about their patients, without error, from textbooks of medicine the next morning. I knew this could not possibly be true so I asked my trusted friends, Ouzama and David, about call. They told me they thought call was this delightful experience in which you are given a beeper and hospital staff call you at home to educate you about interesting and informative cases in the hospital. Then they give you the option to come in and participate. I was quite content with their appraisal of call. I removed all worries from my mind and returned to my more important daily task of counting those in the class who were: A) engaged to be married B) planning a wedding, and C) expecting offspring.

When I finally met call head on I met grief—sleepless nights, confusion, and feelings of inadequacy about knowing very little to help patients. Call was grief.

It was not long before I found many colleagues and myself going through the stages of grief as outlined by Dr. Elizabeth Kübler-Ross. First we went through denial, the central part of any grieving process, and had thoughts like these: "They haven't mentioned call yet so it probably doesn't exist in this rotation;" and my favorite, "There's really no such a thing as call—I can always find loopholes!"

The next stage was bargaining: "If I get all my work done, I won't have to stay up, will I?"

In our depression, we turned into zombies. Some lost weight, others gained weight. We even lost the pleasure of watching "ER" every Thursday night. Some replaced it with an SSRI [anti-depressant] every day.

Anger led us to wonder how with all the advances in modern medicine no one had yet figured out how to entice babies to be born only between the hours of 12 noon and 6 PM.

Seeing no way to change the system, I finally gave into acceptance. I puzzled over whether it was even possible to have understood the concept

of call prior to medical school. In search of the "true" definition of call I opened the *American Heritage Dictionary*, which offered some humorous insights. The first definition to catch my eye was "to cry out loud." I certainly have been known to yell loudly when my beeper goes off. Or maybe it refers to cries to a higher power that emanate from call rooms at the sound of a beeper: "St. Anne grandmother of Jesus," I once heard someone without any known religious affiliation cry.

Another interesting definition was "to take out of circulation." You can certainly say that about my dating life! It must also explain why on the list of those engaged to be married, my name hasn't come up yet. I can only surmise that those who are getting married knew their spouses way before the on-call years.

Many of these dictionary definitions seemed rather inadequate and did not encapsulate the full notion of call that I have come to appreciate. On reflection, I find the concept of call to be quite complex. There is call the schedule, call the experience, and call the duty.

Call, the schedule, though harsh, is ultimately a minor aspect. Call, the experience is personal and can be quite significant and even deleterious. But the idea of call as a summons to duty is the definition that I believe best summarizes our role as doctors: it recognizes our commitment to being prepared to answer the needs of others, to standing present for another's life regardless of self or time, and to keeping vigil over another's well being.

I may never fully enjoy being on call in the schedule sense, but somewhere deep in my heart I take pride in the fact that I have been given the privilege to serve other human beings in this way. At the same time I am afraid because I know that I may not possess the mental aptitude, the physical fortitude and, heaven knows, the attitude to meet the demands of call, especially when another person's life is at stake. So every third night—or tenth (as it will be in my much loved profession as a radiologist)—I hope and pray that I can find the strength to sufficiently serve the call.

As I reflect further, I realize that the idea of being on call is not unique to medicine. I can certainly think of those who have taken "call" for me throughout my life—my friends, my teachers, and my parents who, although not present today, remain my ultimate example of self-sacrifice.

Call in medicine is simply an extension of our humanity. We just do it differently.

So as I say good-bye, I do so with gratitude for having been given the chance to share four years with you and I hope that I see you all again. Take good care of yourself as I know you will everyone else.

'Kemi Tokunbo Babagbemi is an intern at Cambridge Hospital. She will do her residency in radiology at Brigham and Women's Hospital in Boston. She would like to thank David Vu, Thao and Siavash for their help in the preparation of this speech.

Rachel Clark and Marissa Brett

What I Really Learned in Medical School

by Anthony Lamar Mitchell

I'M VERY NERVOUS. I'M VERY NERVOUS, not because all of you are here, but because of the food. Please understand. Lunch was very good, but Harvard has a funny habit of serving very good food before something bad is about to happen. I remember there was a reception before I took a major exam, and we had very good food. As we were eating, one of my colleagues said something to the effect of "eat, drink and be merry, for tomorrow we die." I don't know if those are appropriate words for now, but somehow they seem to fit, given the description of on-call we just heard.

I'm very glad to be here. When I was selected by my classmates, someone said, "I can't believe they are going to let Anthony Mitchell speak." Knowing, of course, that asking a Baptist minister to speak anywhere is like asking the author of *Roots*, "How's your family?" This speech could drag on.

Nevertheless I want to share with you for a few moments what I really, really learned in medical school. The first thing is that ignorance is not bliss. I heard that it is somewhere long ago. In medical school I realized it is not, but not when you might think. Understand that I've been questioned by the toughest of tutors, and when I couldn't come up with the answer, I knew that I could research it the next day and that would be quite all right. Similarly, I've been questioned by some of the most intimidating attendings, and discovered that I could always look up the answer if I did not know it on the spot.

But then one day my mother called with a question about her health. I remember that my end of the phone conversation went something like this: "Uh huh…Are you sure that's really a drug? …You're not part of some experimental research are you? … Well, I don't know." And I realized at that moment that ignorance is not bliss. It is important to be competent in what we do. Notice that I did not say it is important to be omniscient or infinitely wise, but competent. That was the first thing I really learned in medical school.

The second thing I really, really learned in medical school is that it is important to remember our victories

Nancy Oriol, associate dean for student affairs, summons the class for their photo.

more than our defeats. We seem to be caught up in a profession where our good judgment comes by experience, but unfortunately experience comes by bad judgment. At some point in time, we were smart enough to get into Harvard Medical School and obviously, as evidenced by today, we are smart enough to get out.

So when trouble comes, when we don't know the answer, when we're struggling, we ought to remember our victories. Even though we're driven by our disappointments. It is only when we push through the prism of having been right versus having been wrong, that experience grants us confidence. Though I have been wrong more than I care to admit, my confidence comes from knowing I have also gotten it right.

Lastly, the thing I really, really learned in medical school is that although the changes in health care seem to make us feel like cogs in the wheel, there is a fundamental difference between being a technician, someone who merely prescribes medicine or administers treatment, and being a physician, someone whom people look to when they are hurting and in need. That difference is found in one word: compassion. I think that this is worth repeating: the fundamental difference between a technician and a physician is compassion, and that is the last thing I really learned in medical school.

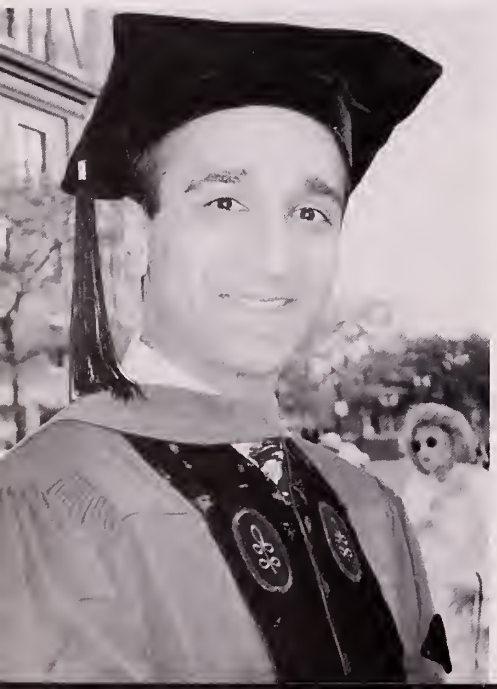
What I have learned in medical school, and more importantly what I have observed in my classmates, who are now my colleagues, are these three things. It is important to be competent, and such are all of you. When you think about it, you'll realize that you'll be right more often than wrong; so it is also extremely important to be confident, and such are all of you. And lastly, the most important difference between being a technician and a physician is to be compassionate—and to understand that you have the ability and the talent to heal, to touch people and give them better lives. And such are all of you.

Anthony Lamar Mitchell '98 is a resident in emergency medicine at Louisiana State University Medical Center/Charity Hospital in New Orleans. He is an ordained Baptist minister.

Unconventional Paths

by Jane Buchbinder

They're new alumni and they're leaving old traditions behind. Over the past few years more than 40 percent of each entering class has taken more than four years to graduate. And for very good reasons. They are pursuing additional degrees, research, international placements and community service. A growing proportion of graduates are also taking detours before heading into their residencies. What follows are the stories of four 1998 graduates who told Jane Buchbinder, associate editor of the Bulletin, *why they chose unconventional paths.*



Mathai Mammen

Mathai Mammen '98 came to the MD/PhD program at HMS in 1989 via Halifax, Nova Scotia from Kerala, India where he was born. "An eternal quest for adventure runs in our blood," he says about his family. The story of their emigration is unusual because "most people in India have a place that has been their family home for 1,000 years."

Mammen's paternal grandparents, Indian missionaries, moved across the subcontinent and set the family's path in motion. Their three sons moved to Canada, Delhi and Australia. Though they had good jobs in India, Mammen's parents came to North America with the hope of providing their children with more opportunities.

And so they have. The soft spoken 30-year-old doctor is enthusiastic about the possibilities his degrees have yielded. "I was either going to be a physician, perhaps in infectious disease, or to do research through an academic position, which is what I was leaning toward at the end," he says. "And then this other opportunity came up!" One might say it is his birthright to choose the long hard route, and then to reap the rewards. But it's still too early to tell.

This 'other opportunity' is a venture capital-funded pharmaceutical start-up—an offshoot of part of Mammen's PhD research in chemistry. He worked with Mallinckrodt Professor of Chemistry George Whitesides, about whom he cannot contain his zeal, to determine the theoretical structure of a molecule and the entropic result of its interaction with something else. "We applied this to the influenza virus by constructing molecules that inhibited interaction between the surface of the virus and lung cells." This concept can be extended to a great many areas of medicine from infectious diseases to cancer.

"After the research was completed and I was going back to rotations, Whitesides and I started talking about developing a company with Jim Tananbaum '89," who had gone straight from his MD to his MBA (and was already involved in another start-up with Whitesides). John Griffin, a Stanford University Chemistry professor left his position to join the venture. The four gathered a number of prominent scientists (many from the HMS faculty) as an advisory board, created a technical plan and then a business plan. Their hard work yielded what is now called Advanced Medicine, Inc.

The company officially opened its doors in San Francisco on May 1, 1997 while Mammen was still a medical student. "Between this work and rotations I didn't sleep for two years," he says. "But it was incredibly fun. I have no regrets."

Started by four people, the company now has 75 employees—chemists, biologists, pharmacologists and a development team. Their work could open a whole new way to design drugs. "Start-ups like this are risky ventures. More often than not they don't pan out," Mammen says, like an optimist trying to remind himself of fate's full range.

But they're no riskier than flying half-way around the globe to start a new life. "There will always be more traditional paths for me to take."

Mathai Mammen '98 is chief medical officer of Advanced Medicine, Inc. in San Francisco, CA.

Myrtha Cesar

"I grew up in Haiti and came here to attend high school and college. My family came because there were a lot of political upheavals in the '80s. We left to escape the danger, but also to have more class mobility, because either you're poor or wealthy in Haiti. It took five or six years for me, my sister and my father to come here—one person at a time. We moved to Brooklyn, NY. My mother is still in Haiti.

"In Brooklyn I thought we had everything. We had doorknobs that looked like giant diamonds. We had a refrigerator. And there was this huge box of pennies; I divided it into piles for buying homes and other things we would like. I thought that we had become rich overnight. It was a slow realization for me to see what was missing, especially in the area of health. If we ever were sick my father would invite people to pray over us. My father doesn't speak any English, and at the time we really didn't have any money. But aside from this, those living in our Haitian enclave didn't use doctors.

"Throughout high school I was in a girls' group home. I had been taken out of my father's home because most of the time he worked very hard. So there was either starvation or neglect for us to deal with. There was a physican at the girls' home who always asked me about my opinions and my feelings. It was exciting that someone cared about what I thought. I worshipped her and that made me think physicians can save the world. She definitely saved me.

"Because I had no previous connection with the medical world, I had these mystical ideas that if everyone had a doctor the world would be cured of all its social ills. I can't believe I thought that!

"The reason I came to medical school, beside all this foolishness, is that I thought that Harvard would be able to show me how to serve not just an individual patient but also a whole community. I did volunteer work, including a program called Taking It to the Street to screen people in low-income communities for hypertension, diabetes, and high blood pressure. Then I did the same at several Haitian churches.

I was seeing people with above 200 systolic blood pressure and with blood sugars that are between 350 and 400—the kinds of people you don't expect to see just walking around the streets.

"During my third year I started to realize that there's so much that one community needs that any individual project in a community isn't enough. There had to be a higher level. Like institutional programs.

"I see the immigrant community as a forgotten group of people. There's nothing about them in the medical journals. You don't hear about their medical concerns. That's why I thought that going into public health would help. That's why I'm starting the MPH program now.

"I really feel I finally have the support, which is the main thing, and the background to understand how to structurally build the kind of programs I'm interested in. I want to get these communities information about breast cancer, so I'm distributing flyers about mammography centers as well as trying to create booklet that's very visual, so language and literacy aren't such a concern. I've been to several Haitian churches because I know that if there's anything wrong they'll go to church instead of a doctor. I'm using the church as a base from which to distribute information.

"A lot of Haitians believe God will take care of you. They believe that physical trauma is associated with cancer. When I ask the women about their risk factors they say, 'I don't have any—no one ever hit me in the breast.'

"I really hope that I can be effective some way. That's why the evaluation information at the public health school is so important. I'm learning to be sure that I'm addressing their needs rather than my own needs or the medical school's needs.

"My parents are hoping that I'll go back to Haiti; they see me as an asset to Haitians there. There's almost an irrational feeling that that's what you do—whatever you get comes back to the community. But I can't please them in every way. I think they feel that they failed me and my sister because we were in the group home, so I think that my graduating from Harvard is affirmation that they did something right. They tell everyone they know that there's a doctor in the family now."

Myrtha Cesar '98 is enrolled in the MPH program at the Harvard School of Public Health.

Tristè Lieteau

"My mother was a teenager when she found out she was pregnant. She married my father and dropped out of college to be a full-time mom. Then she had my sister. Four years after I was born she went back to college to finish her degree and then went on to medical school. She had a lot of family support from her parents and cousins, and a lot of encouragement.

"Growing up in inner-city Chicago, I saw lots of pregnant teenagers and I always wondered why my mother's experience and my experience were so different.

"Pregnant teens hear that there are all sorts of reasons why they won't be

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Uday Naga Kumar '98 says that he's taking one year off before his residency "to get the entrepreneurial spirit out of my system." He says that this is his only opportunity to break up the track he's on.

Kumar is 25. Few outside the medical field would understand this sense of pressure and timing coming from such a young man. But as he continues to speak, his story gets more complicated. "I already miss the patient contact," he says. "I'm looking forward to being a resident."

Kumar is vice president and CMO (chief medical officer) of a new company called Biomedical Modeling, Inc. Here's how it came together: Last July he was doing a rotation in San Francisco, where his wife is a medical student. She convinced him to go to her high school reunion where one of her old chums, now an engineer, started talking about how he and a partner knowledgeable about biology were coupling CT scans with a model-making technique used in aeronautical and automotive fields—rapid prototyping it's called—to make three-dimensional anatomical models. "And then he took me to his car where he had this model of a skull!" Kumar says. To be more precise, it's a model of a skull with a tumor.

The problem was that the two creators couldn't figure out what to do with their prototype. They didn't have the knowledge to understand its many applications. That's why they asked Kumar to join their venture.

Six months later, the company started making biomodels that are useful for everything from creating custom implants to teaching medicine and science to legal cases. Most often, however, they're used for presurgical planning in complex craniofacial and orthopedic operations.

Kumar offers the example of one physician treating a child with a forearm deformity. He ordered models of both the child's arms so he could examine, in depth, the differences and discern how to reconstruct the deformed arm. The hope is that this type of planning outside of the operating room will reduce overall O.R. time and will provide a better outcome for the patient. It may also reduce the cost of the operation.

Biomedical Modeling, Inc. currently has orders from Puerto Rico, Venezuela, Los Angeles and Boston. Kumar says that he's quickly learning what it takes to start and run a business successfully. And now it comes out that there were other reasons he went the entrepreneurial route. "To be honest," he says shrugging his shoulders, "going into entrepreneurship seemed like the best way to learn about the business principles in health care. As a physician of the future, I know these will come in handy since business is an increasingly integral part of the health care system."

He's resolute that students should learn about the financial realities and pressures that doctors undergo every day. "Being a doctor today is often not the career that it was for our parents;

as smart or won't have as many choices as others. But I told them there are always people who beat the odds and prove these statistics wrong. I did that through community service when I was in high school and in college, and by working with teen mothers and their children in medical school also, after which I had planned to specialize in adolescent medicine.

"I came to HMS in 1991 when health care reform was just starting. No one knew how that would work out. We had speakers coming in to discuss all the changes. Many things seemed to be falling out of doctors' control and there was a lot of complaining about this.

"Then one day we had a speaker who talked to us about the legal implications of genetics. He had both a law degree and a medical degree. I never had heard of anyone having both degrees. I talked to him after class about all the ways that medicine is tied to law—Medicare, physician reimbursement issues, access to health care, social issues. Then I started to entertain the idea of creating a new kind of program for myself.

"My advisor and the deans were very encouraging. They helped me find a small program at the University of Chicago that trains future leaders in medicine. There were seven or eight medical students in this program getting all sorts of different advanced degrees—public policy, philosophy, social science, even Russian history. I got my JD during this time.

"When I came back to HMS, I came back to the hospital. I really enjoyed being there, working with patients. That's why deciding what direction to head in was so difficult. I still had all these ideas about adolescent medicine. But it came down to considering what my long term goals were. And responding to my sense of responsibility. I realized I could try to make a difference one patient at a time or I could try a broader approach, through law. I think that through law I can be a voice for physicians and for patients and bring their stories to the forefront.

"Now I'm training with a general law firm, which is very similar to the way new doctors train during residency. My plan is to carry the skills I get here to some place like the Children's Defense Fund. Eventually I hope to work for the AMA or to become the president of Planned Parenthood."

Tristè Lieteau '98 is a lawyer at Sonnenschein, Nath & Rosenthal in Chicago, IL.

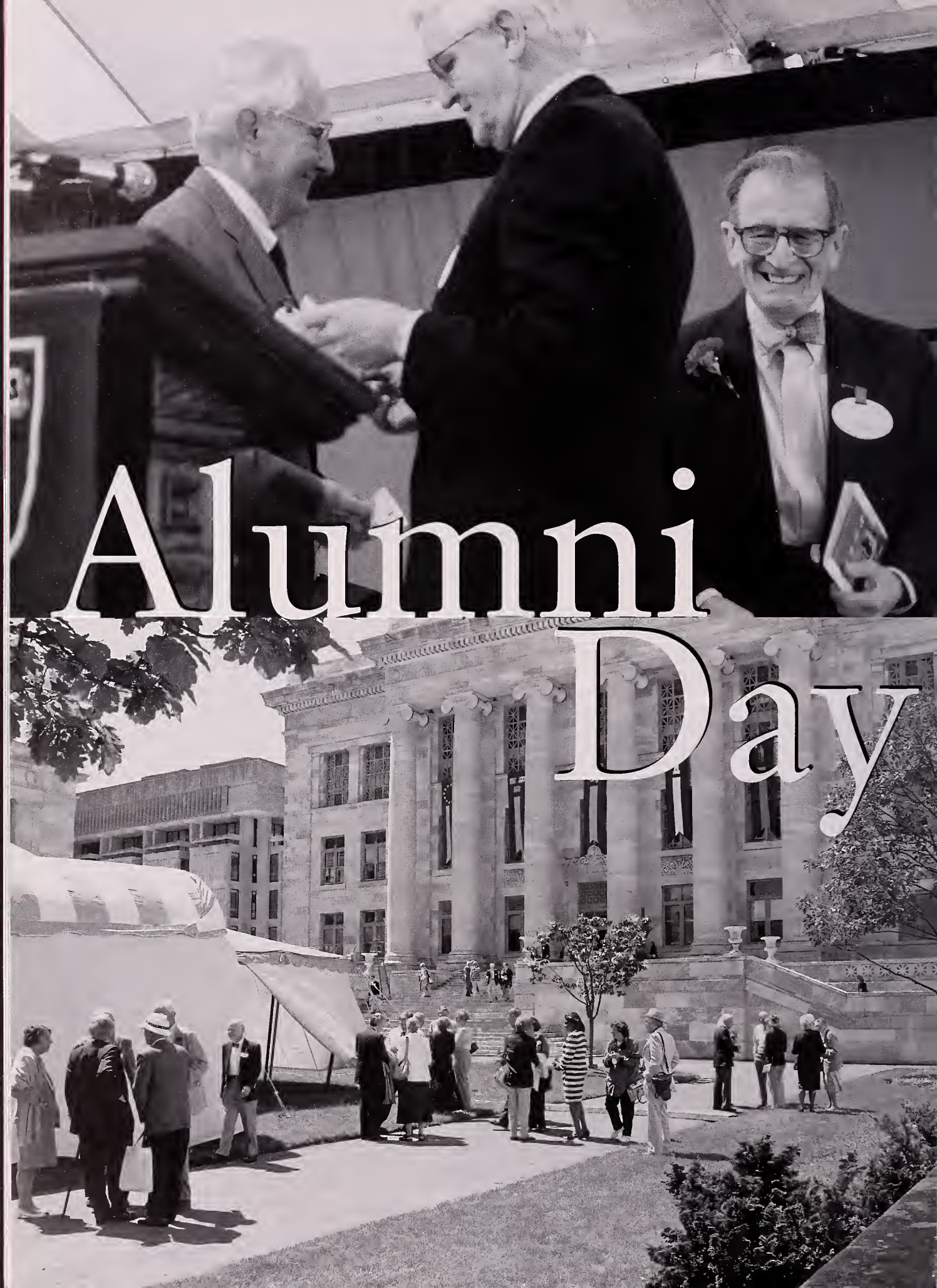
Uday Kumar

photo by Laura Wulf

they made decisions about how to run their own practices and had the final say about how their patients should be treated." He pauses, "In the HMO environment you're a salaried employee, sometimes with very little autonomy or control."

He thinks that's why more and more students are taking alternative routes. "It's very disheartening," he says. And then he perks up, "My goal is to support a family from areas outside of medicine with a business venture and then to practice at a place like a county hospital where, because many patients are very sick and don't have insurance, there often isn't much overlying bureaucracy."

Uday N. Kumar '98 is vice president and CMO at Biomedical Modeling, Inc. located in Boston and San Francisco, CA.



Alumni Day

A CRISP WIND SWEPT INSIDE THE Quad's funnel, shaking and billowing the yellow tent, while the first visitors ambled from the bright sunlight into its shade, closing their sweaters and coats tightly around them.

"You may wonder why there aren't more people here today," Dean Daniel Federman '53 began, rubbing his cold hands together, "so I remind you of the night before the battle of Agincourt: Henry V was circulating among the troops and one complained to him that they were so few and the French troops were so many. Weren't they outclassed and outnumbered, the soldier wondered? And Henry's response was something like: 'not at all, if we are to win then the greater glory for each of us, and if we are to lose, why should any more English blood be shed.' Well I don't know if we're going to shed blood today, but we're certainly going to chill it."

< The Dean accepts the 50th reunion gift from Phil Troen and Jack Connolly.

< Mingling on the Quad.

As the morning progressed, a growing group of alums made their way into the tent. Eventually there was a considerable crowd and enough body heat to keep everyone comfortable. But that didn't stop the tent from shivering.

Dean Federman quipped, "For those of you worried about whether or not this tent might collapse, I've been here about 32 times and it's only collapsed once," which prompted a round of nervous laughter. "I think you're safe."

But only moments later one of the poles supporting the tent was unearthed by an upsurging wind. For the duration of the morning one vigilant and tireless alum was left with the job of holding *up* the fort. The spirit of community service was alive in an unexpected way.

A: Alumni Day photos by Heather Autry

Education in the New Millennium

"What we share is that we were all at one time a student, and then an intern, and then, for almost everybody, a resident as well," segued Dean Federman to the symposium, the main attraction of the morning. "It's ironic that in a university, taking care of a student takes second place to taking care of a patient. Compared to the excitement many doctors experience in their research investigations, teaching sometimes takes second place in this context as well. It is very much our issue of the moment that the student is in danger of coming in third or fourth place. And so my question is: How is your morale as you approach the teaching opportunity?

The four distinguished panel members each had a unique response to this question, which fueled discussion between the audience and the panel afterwards. Eric Larson '73 discussed the ways that economic reforms are necessitating changes in student education as well. David Blumenthal '74 compared the losses and benefits of nonprofits versus investor-owned health care organizations. Sharon Murphy '69 discussed the problems specific to children's hospitals and worried that changes are affecting the values and goals of medical students today. And finally, recent graduate Anna Berkenblit '96, talked about her unconventional choice to do her residency partially based in an HMO and how this has led to her fulfillment.

Questions from the Crowd

Jerry Foster '51, with his insider's knowledge as faculty associate dean for admissions, wondered why Berkenblit, whom he remembered as a summa college graduate from the most rigorous scientific program in the country, had chosen primary care? Berkenblit offered the irrefutable answer: "It was a response to the kinds of people that I dealt with in my training; it was in my heart."

Grappling with the effect of changes within the university system, Gordon Cutler '73 approached the microphone to note that the NIH has a somewhat overlooked resource for post-graduate training, which has retained many of the treasured qualities of traditional education. "Unfortunately" he added, "some of the pressures in the outside world are entering the NIH so their clinical program is also in jeopardy."

Dean Federman was delighted to see in the audience the physician who was an attending during his own internship over 45 years ago. He introduced Bob Berg '43B by telling the wry story of "how he taught me about the very rapid rate of cancer growth, because I examined a patient the night before he did and failed to feel the mass he readily felt. I hadn't understood geometric growth before that," he said chuckling.

Wondering if the insurance companies can be made to share more of the financial burden of medical education, Harvey Rothberg '53 turned to the panel. David Blumenthal said that this very question was considered but not acted upon by Congress prior to the Balanced Budget Act of 1997, and that something similar is under discussion right now by the bipartisan commission on the future of Medicare. "Unfortunately, I don't think there's a political force right now that's sufficient to push it through," Blumenthal said.

Considering the multifaceted strain of being a clinical teacher in the new medical setting, Steve Pauker '68 questioned what hospitals can do to respond to this dilemma.

"We've grappled with this question at the University of Washington for 15 years," Eric Larson said, describing two distinct categories of faculty appointments—clinician/scientist and clinician/teacher—funded by different sources to cut down on the number of responsibilities each clinician has. It's a system that's working very well, he added.

Grant Rodkey '43A chimed in to

Steve Pauker questions the panel.

say he's been astonished to find that he can offer more compassionate patient care at the VA than he could at MGH. Given economic reform, Larson was not so surprised and said that it's easier to do things and to get human values introduced through the public sector than it is in the marketplace. "But we're in a state of market reform," he said. "That's what we chose as a society when the Clinton reform plan went down." He went on to explain that public service institutions that want to survive in this era have to be very nimble and express their values in the design of their programs. And then adhere to those values.

William McCarty '48 suggested that doctors could still be responsible for being concerned and committed teachers. "We always thought that it was an honor to teach medical students. I carried that through the time that I spent in my practice," he said, by telling all of his interesting patients that he'd like to have some young doctors-in-training look at them for about an hour.

Business Matters

Tenley Albright, chair of the Alumni Fund, was called upon to make an impromptu speech, which appeared to surprise her more than anyone else. Nonetheless, she collected her thoughts in her brief walk to the podium and was eloquent as ever. She thanked everyone for being so generous and then remarked on how many of Dean Joseph Martin's visions from last year have already been realized: from diversity to infomatics, from reaching out to those within the school to those in community medicine outside of the school.

"He needs us more than ever and the students need us too," she said, explaining that only a very small portion of Harvard's impressive endowment can be used by the medical school.

Richard Peinert '73 presented the dean with a gift of $180,000 to establish the Class of '73 endowed scholarship fund. "This gift represents the generosity of many people out in the audience today. Our class is committed to raising a total of $250,000 to fully fund the scholarship over the next three years," he said with confidence. The dean happily accepted the check and Peinert's hearty handshake. "Hillary got a hug," he kibitzed.

Phil Troen and John (Jack) Connolly, Class of '48, began their presentation by remembering the 43 members of their class who had passed away since their graduation. One particularly large donation came in memory of Dick Gorlin. Connolly '45 felt challenged when someone said that doctors are the stingiest people and that it was doubtful that he could raise $100,000 from the 100 doctors in his class. "But we did much much better," Connolly said, triumphantly turning over the check. $622,882 was raised. Ninety percent of the class participated in gifts honoring Dan Tosteson, Dick Gorlin, and the scholarship fund—an announcement that received a big round of applause.

George Thibault '69, the council president-elect, presented current council president Bob Lawrence '64 with a gift of appreciation.

Thibault said he was very honored to be representing these incredible alumni with their wealth of talent. "The school will benefit even more from your collective wisdom and experience." He characterized the new council as a body of people "who have a broad world view" about medicine's place in society. He also looks forward to working with his former teacher and mentor Dan Federman, who smiled graciously and nodded in agreement.

Jane Buchbinder

"We'd spent the whole afternoon on eight or ten patients at no charge to the medical center, lots of education for the med students, and a lot of personal satisfaction to me. And while I realize that there are always economic factors, there should still be some of that going on in this day and age."

Federman closed the discussion by saying "I don't think it could be said any better than that. He involved his staff and he considered it part of his obligation." The dean then went on to describe a very similar local alumni program which is seeking doctors to help organize Harvard medical teaching sessions using their patients.

The Dean's Turn

Alumni Day's final speaker was Dean Martin who began his speech by paraphrasing Thomas Jefferson: "The price of greatness is eternal vigilance," which capped all that was said beneath the windblown tent. The dean stressed the importance of these words, as well, in his elucidation of the school's priorities:

- to continue efforts to sustain and strengthen our excellence in our basic research enterprise;
- to forge closer bonds between the medical school and affiliated hospitals;
- to improve and broaden our educational programs and our patients care services through increased attention to diversity—of the faculty, student body and the staff;
- and to continue to examine and reevaluate our educational programs on all levels.

He echoed many people's sentiments that these are very difficult times in managed care, and then he told a story to illustrate some of the new challenges: "St. Peter at the pearly gates was approached by 40 health care administrators. Peter was very troubled and puzzled and went to seek God's advice about what to do with such a tribe.

God said 'You must be very careful.' He said 'We don't want any for-profit administrators. We don't want anyone who's been convicted of Medicare fraud, and we don't want anyone who puts money ahead of patients.'

'Thank you God,' Peter said and rushed back to the pearly gates. A few minutes later he came back and said: 'God, they're gone.'

'What do you mean they're gone?'

'Not them! The pearly gates!'

The dean encouraged alums to spend the afternoon visiting the affiliated Boston hospitals, and signed off with a quote from the other Dean Martin: "Keep those cards and letters coming."

Preserving the Environment

for Medical Students and Resident Education

Change Brings Challenge

by Eric B. Larson

PART OF THE ATTRACTIVENESS OF alumni activities is reliving our experience as students. We are drawn together to renew friendships and recollect old times. As this is my class's 25th reunion, the program includes pictures of us as students socializing, interacting with deans, faculty and lecturers, our second-year show and, of course, on strike after the Kent State deaths in 1970, which closed down the medical school!

Although I'm not surprised that there are no pictures of the patients we saw as medical students, the absence of any mention of them is noteworthy. It may reflect the unusual relationship students have with patients. Students are not yet doctors and the best we can come up with as a title is the euphemism "physician in training."

From my perspective as medical director of a major teaching hospital for the past nine years, I have some ideas about the problems we face in supporting student education involving patients and about what can be done in the near future. I plan to focus on students but will address resident education as well.

For perspective, how did we do it 25 years ago? How were those good old days we reminisce about at reunions? Most of our training was in the wards of major teaching hospitals—the City, the General, the Brigham, the BI, and the Lying-In. Many, if not most, of the patients were indigent or were in a captive environment. Our residents and teachers would "find" us patients with interesting physical findings, who, because they had nothing better to do, were generally happy to let us listen to their murmurs, feel their lumps, possibly suture their wounds, and certainly listen to their stories. During surgery clerkships the students did pre-op physicals and participated in post-op care and perhaps saw patients in post-op clinics. By today's standards we had limited exposure in ambulatory care.

However, even then we knew—as Bob Dylan told us—"The times, they are a changing." But who among us could have predicted how they would change? Certainly not I or my classmates. Prediction, however, is truly dangerous. Remember it was Harry Warner—founder of Warner Brothers Studios—who said in 1927: "Who in the hell wants to hear actors talk?"

Today we still have our teaching hospitals, but my how they have changed! The University of Washington Medical Center (UWMC) is a licensed 450-bed teaching hospital, which is relatively small by academic medical center metrics. Although given the downsizing that has occurred at some medical centers in the past ten years, we are actually catching up to the teaching hospitals we compare ourselves with. That is, as we stay the same, they get smaller.

To state the obvious, the so-called modern hospital has changed and the resulting institution is not conducive to old-style student education. I cannot describe all the changes but will highlight a few that affect clinical training experiences for students.

As we all know, the length of stay has dropped dramatically. The declining length of stay has caused hospitals to close and is responsible for downsizing others. The rather leisurely inpatient setting we used to have for teaching has been replaced with a more intense one where things happen quickly. Today's general wards are similar to what was once considered

intensive care. A person with chest pain can have an MI ruled out within six hours—not the three-day standard of the '70s. If an MI is "ruled in," many patients will have definitive procedures within hours of presentation. Same-day surgery is the standard of practice. Cost-efficient outpatient pre-op evaluation substitutes for inpatient evaluation the night before surgery.

As the length of stay declines, activity is increasingly dense—packed into hospitalizations. A vast array of diagnostic and therapeutic activities are mapped into treatment plans to eliminate "wasted time." Ironically, as length of stay gets shorter, the cost per day increases dramatically.

As length of hospital stay has declined, sites of care have multiplied.

Ambulatory surgery and ambulatory catheterization led the parade of procedures not requiring inpatient hospitalization (nowadays performed in surgery or specialty centers) that used to be in teaching hospitals. We also use home care, hospice, skilled nursing facilities, step-down units, home infusion services, adult group homes, rehabilitation services and, of course, traditional nursing and convalescent homes. The growth and attractiveness of these services developed in response to clinical research on medical care and especially because of Medicare prospective payment incentives to reduce length of stay.

These changes have presented real challenges for our student and resident education programs. Just as you will not find a picture of a patient in our alumni week program, you'll be equally hard pressed to find patients in today's hospitals who can sit still long enough for students.

Residents are a little better off since they are vital to the production process in most hospitals. On the other hand, the pace at which patients move through is so rapid and the demand for economically efficient production is so strong that we have created housestaff who are so overworked, they have difficulty learning from their patients during the brief time they care for them. Especially in New York, state and residency review committees have begun to micromanage residency programs to address the quality of patient care and the educational experience—a response to the so-called "crisis" in the resident education system.

So, how do we preserve the environment for medical student and resident education? The answer is simple: we don't!—because we can't! The environment in which we provide patient-based education has changed. We've had to change with it. But what have we preserved and how have we done it?

What we've preserved is the patient-based nature of medical education. Unlike medical schools in most

other countries, students and residents still learn by direct involvement in patient care under supervision of more experienced clinicians. We continue to stress that students and residents learn best by gradually increased responsibility, based on demonstrated competence. We do this with teams of students, residents of different experience levels, and attendings. But we do it in a different environment.

For example, at least one-half of the three-month, third-year medicine clerkship is provided in an outpatient setting at most of the University of Washington affiliated sites. Residency programs have developed more continuity-of-care clinics and are beginning to teach in nontraditional settings away from the hospital. The daily ward work ("scut") is more likely to be performed by technicians, nurses and occasionally (believe it or not) by faculty.

New technology is also being harnessed. The National Library of Medicine, decision support systems, video conferencing and telemedicine literally bring the library, faculty, or classroom closer to the bedside—making the trip to the library or main campus less important.

Students and residents can spend more time close to their patients than I did. The technology of transmitting information is better, and the result is that our students and residents (I think) have more knowledge and skills than their predecessors did at equivalent training levels.

What are the challenges?

The first challenge, as always, is financing undergraduate and graduate medical education. Training in the context of patient care is inefficient and costs money. Traditionally we

financed patient-based education with volunteer faculty. Through Medicare and Medicaid we now receive very generous subsidies in the form of pass-through supports for medical education from the Health Care Financing Administration (HCFA), a policy that was considered necessary to expand our physician work force. These subsidies have helped fuel clinical growth of the modern academic medical center. Today we are absolutely dependent on these so-called "pass throughs."

However, HCFA policy has changed with the Balanced Budget Act of 1997. Support for graduate medical education will fall, given the oversupply of doctors. I believe there's little chance to reverse the fall—in spite of intense lobbying by the academic medical center establishment and others. The juggernaut of market reform does not tolerate inefficiencies. Most insurance companies and other providers do not feel the need to fund medical education given the oversupply of doctors.

The academic medical center has grown into a clinical service/scientific industrial complex. It has similarities to the so-called military industrial complex some students protested in the sixties and early seventies, protests that led to the "shutting down" of Harvard Medical School in 1970. Our current academic medical centers are vast enterprises and provide vital jobs to countless communities across the United States.

After decades of unprecedented growth, it seems likely that the clinical part of the academic enterprise could experience the downsizing we have witnessed in other industries. It is difficult to predict whether regulatory or market forces or both will forcibly downsize us. I'm loathe to make predictions, especially when I remember that it was Albert Einstein who said "There's not the slightest indication that nuclear energy will ever be obtainable." My prediction, however, is that times will be tough and that funding and support of students and residents will be difficult—especially at a time when we have finally agreed as a society that we are training too many residents and may also be graduating too many students.

The second challenge will be to preserve a role for students and residents in the direct provision of care. To me this is the sine qua non of our training system. The care of the patient has to be learned, as Francis Peabody said, "by caring for the patient." The challenge comes in two ways: first, as information about performance becomes readily available, we in medical education will need to prove that we can provide service and outcomes in an educational setting of equal or better quality than other providers. That is a big order given the inefficiencies of the learning environment.

The temptation will be to take the easy way out, that is, to abandon or eliminate trainees in response to the conventional wisdom of the market or as some sort of homage to efficiency. If we do that, hospitals affiliated with schools of medicine will become just another economic engine and will eventually lose their academic mission. We were recently pleased to learn that the major insurance company in our county found that UW physicians were relatively cost-efficient in the use of resources averaged over one year.

I do not know how we will respond to these and other challenges facing medical education as we attempt to preserve an environment to train students and residents for a career of service excellence and life-long learning. I do know it is foolish to make predictions—especially about size. For example, Thomas J. Watson, chairman of IBM, stated in 1943: "I think there's a world market for about five computers." So I won't make any predictions about size or scope.

I do know, however, we will need to adapt to change. We will need to be a true learning organization—that is an organization that can learn to change, or more precisely adapt itself to change. We will also continue to use and adapt to changing technology. Through all the change we need to keep our focus on teaching the knowledge, skills, and values that are based in the experience of caring for patients.

Eric B. Larson '73, MPH, is medical director of the University of Washington Medical Center in Seattle, professor of medicine at the University of Washington Medical School, and associate dean for clinical affairs.

Pros and Cons of Profit

by David Blumenthal

IT IS HARRY TRUMAN, I BELIEVE, who is credited with demanding that his advisers find him a one-armed economist, an economist who wouldn't qualify every opinion by saying: "On the one hand . . . but on the other hand." In some situations, to paraphase the late Barry Goldwater, balanced discourse may not be a virtue and wins you few friends.

That is often the case today with discussions of the role of for-profit health care in our society. The proliferation of investor-owned health care organizations, highlighted almost two decades ago by Arnold Relman, MD in *New England Journal of Medicine*, has become emblematic of the fundamental changes that are transforming our health care system: the commodification of health care, the loss of its local character, personal profiteering, tough cost controls, standardization of health care processes, and many other developments, both negative and positive. Few health care topics more inflame public emotions than for-profit care.

Nevertheless, my assigned role today is to keep both my hands in play, and make sure that both the advantages and the problems of investor ownership of health care organizations are presented for discussion. I will outline the principles that underlie questions of investor ownership, and discuss some of the evidence on the comparative performance of for-profit and nonprofit health care organizations. Finally, I will discuss some policy implications.

Angry letters, by the way, should be addressed to Dan Federman whose persuasive powers are the reason I stand before you today.

A Principled Approach to Ownership

Technically, the primary difference between for-profit and nonprofit health care organizations is their ownership. For-profits are owned by investors. Nonprofits are owned, at

David Blumenthal flanked by Gordon Moore and Gerald Foster.

least theoretically, by their communities, which are represented on boards of directors or trustees. These differences in ownership are associated with many other differences in the laws governing these two types of organizations. Investor-owned organizations are controlled by and operated for the benefit of share-holders, who may receive dividends if the organization is profitable and may trade their shares privately or publicly, subject to applicable statutes. Nonprofit organizations operate, at least in theory, for the benefit of their communities, must reinvest their profits in the organization, and often cannot be sold without the approval of state governments (except to another nonprofit).

One way to think about ownership of health care organizations is based on principles or ideology. Many believe that investor-ownership is either wrong or right in health care. Those who hold the former view make the well-known argument that health care is a special good, unlike almost any other, and should be organized and distributed in accordance with a set of overriding ethical precepts. The first precept is to put the patient's interests before all others. Opponents of for-profit ownership believe the opportunity to earn profits from dividends and equity creates a conflict of interest for owners of health care organizations that is bound to diminish their commitment—and their employees' commitments—to patients' welfare. This conflict of interest, it is argued, is simply wrong and should not be permitted.

On the other side of this argument, advocates of investor-ownership believe that providers of health care cannot avoid economic influences any more than the laws of gravity. Those who believe that nonprofit ownership protects health care providers from economic conflict of interest, they argue, are closing their eyes to the pervasive financial influences on the behavior of physicians, and the large surpluses that nonprofits organizations have accumulated over many years. The best we can hope for is to make sure that the economic interests of providers and the welfare of patients are aligned, so that when health care organizations do well, their patients do well also. Privately-owned, for-profit organizations, competing in reasonably free markets, have achieved this goal in other sectors of our economy, it is argued, and will do so in health care, given the chance.

On "principle" is a perfectly reasonable basis for resolving the dispute about ownership in health care. If there were a national consensus on the principles that should govern our health care system, we could stop the discussion here. However, except in Minnesota and New York, which outlaw some forms of investor ownership in health care, the public seems unresolved about the fundamental issues underlying the ownership debate.

For-profit health care is completely legal in 48 states, but the sale of nonprofits to for-profits often results, nevertheless, in rancorous debate that seems to turn on issues of performance. Which type of organization is more efficient? Which produces better quality? Which benefits the community more?

These questions exemplify a second way of thinking about—and potentially answering—questions of investor ownership in health care. We might call this the evidence-based approach to social controversy. It seeks objective data that one or the other type of organization performs better at meeting the needs of patients and communities.

Comparative Performance

Measuring the performance of health care organizations is an enormously complex task. Where ownership is the issue, the problem is complicated by the fact that we must evaluate the influence of ownership with reference to a multiplicity of organizational types: hospitals, physician groups, health plans, nursing homes, home health care agencies, renal dialysis centers, and others. By far the most data are available on hospitals, so I will concentrate on these. What we know about hospitals, however, may or may not apply to other segments of the health care industry.

Several types of performance are relevant to debates about the merits of for-profit and nonprofit hospitals. These include their comparative cost of providing similar services, the comparative quality of care they provide, and the amount of community benefit they confer. Hard as they are to measure and define, the concepts of cost and quality are generally familiar to health care audiences. However, the concept of community benefit—which has received increasing attention in recent discussions—needs further elaboration.

The community benefit standard for measuring the performance of health care organizations asserts that these institutions are capable of adding to the public welfare in ways other than caring for the patients who enter their doors. First, many hospitals, especially nonprofits, have traditionally provided charitable services in the form of caring for poor and indigent patients, conducting research and teaching, and providing educational and outreach services to the general community. Second, hospitals have contributed to the economic welfare of communities by employing local residents and (in the case of for-profits) paying taxes. The community benefit standard assesses the extent to which nonprofit and for-profit hospitals assist their communities in these various ways.

Current evidence on the performance of investor-owned and nonprofit institutions on these several standards is mixed. With respect to cost, there has been little published research since the mid-1980s. That work showed that nonprofit and for-profit organizations were comparable in costs, but that for-profits tend to have higher prices and collections.

Thus, their cost to society may be higher.

Whether the same is true under today's competitive conditions is unclear. Recent press exposés of the pricing practices of Columbia/HCA suggest that they have been aggressive to the point of criminality in their pursuit of revenues. Whether other for-profit chains pursued the same strategies is unclear, however, and as recent Medicare investigations of some teaching hospitals suggest, nonprofits may not be above reproach in their billing practices.

Concerning quality of care, convincing comparative data are generally lacking. Work in this area suffers from the lack of available information on quality of care in general in hospitals, and from difficulties in adjusting for differences in patients cared for in facilities of differing ownership. Teaching hospitals are predominantly nonprofit, and existing case mix adjusters may poorly account for variation in the types of patients seen in such major centers compared to smaller, community institutions owned by for-profit companies.

Several aspects of community benefit, such as uncompensated care and tax payments, seem easier to measure than cost or quality of service, so there has been much discussion recently of this dimension of performance. The data on care of poor and indigent patients give a slight edge to nonprofits. The average percentage of revenues that hospitals commit nationally to uncompensated care is between four and five percent, and differs little by ownership. However, there is some evidence that national data are misleading because for-profits tend to locate in southern and western states with high levels of uninsured residents. Controlling for location, nonprofits provide more uncompensated care.

Because teaching hospitals are predominantly nonprofit, nonprofits as a class of institution contribute much more to their communities in the form of teaching and research than for-profits. Major teaching hospitals subsidize research and teaching to the tune of many hundreds of millions, perhaps billions, of dollars annually. However, recent research we have conducted suggests that when teaching hospitals have been sold to for-profit institutions, there has been no erosion of support for teaching or interference with educational content.

The data on indigent care, teaching and research indicate that on these dimensions of community benefit, nonprofits clearly perform more strongly than for-profits. However, many nonprofits provide little in the way of community benefit, while enjoying important tax advantages. Furthermore, when the taxes paid by for-profits are factored in, their aggregate contribution to their communities equals or exceeds nonprofits. By taking over failing nonprofit institutions, for-profit hospital chains have not infrequently prevented the closing of local hospitals. This preserves local jobs and is highly valued by many communities.

Stepping back from the details, an evidence-based approach to investor-ownership suggests the following: nonprofits generally perform as well or better than for-profits on most critical dimensions, including cost and community benefit. When taxes are included, however, the advantage is reduced, and there are times when the sale of nonprofit hospitals to for-profits plays an important role in keeping prized local institutions alive.

Where is that one-armed analyst when we need him?

Policy Implications

In the face of dispute and uncertainty, Americans often fall back on a tried and true solution for making social choices. It is called an open, democratic process. There is no short-term likelihood that for-profit ownership will be prohibited in many more states. Sales and conversions of nonprofits will, therefore, continue. Perhaps the best that we can hope for is that the process of sale and conversion will be open and thoroughly reviewed by accountable authorities, so that the public's interest will be protected.

This has not been the case in many past conversions, and as a result, the public has been short-changed at times. One frequent complaint is that for-profit organizations often get away with paying far less than the real value of the nonprofit hospitals they purchase. The reason is simple. The standard price for a hospital is about six times its earnings before taxes, depreciation and certain other expenses. However, in our booming stock markets, that same asset will typically be valued at 15 to 25 times earnings. Thus, publicly-traded hospital chains capture an almost immediate windfall in these transactions.

The same scenario has been played out in the conversion of health maintenance organizations to investor-owned status. There have also been numerous instances in which transactions between nonprofit hospitals and investor-owned chains have been tainted by side deals in which negotiators for nonprofits have been generously compensated or granted sinecures as part of the purchase.

These circumstances suggest at a minimum the need for greater oversight of the sale of nonprofit health care facilities to for-profit organizations. That oversight should come from public authorities, and should assure a thorough, public vetting of the terms under which nonprofit institutions are sold to or convert to for-profit organizations.

Unfortunately, in the rough-and-tumble markets that now dominate health care, the need for such oversight is not always recognized. It is assumed that health care is like any other market, where legal transactions between consenting private entities should be left alone. The differences between health care markets and other economic sectors are arguably numerous. One important difference is that the nonprofit sector has benefited over time from enormous public investment in the form of tax deductions and charitable contributions. Allowing private parties to profit from that investment without public oversight and consent is inappropriate.

Investor-ownership has waxed and waned in our health care sector, and at this point, it is clearly waxing. Its short-term future, however, may be less rosy. For-profits live on their access to capital through the stock market, but markets have not been kind to these organizations recently. Achieving the required growth and profit targets is getting harder, and some well-publicized catastrophes—the recent experiences of Oxford Health Plan, Columbia/HCA, and several physician management corporations—have made investors appropriately cautious.

We may very well see a slow-down over the next few years in the growth of investor-ownership, as greater realism about their prospects sets in. Certainly, tales of the demise of nonprofit ownership are premature in health care.

Over the long term, for-profit ownership will persist in health care, as it has since the birth of our country. Controversy over investor-ownership will continue as well, if for no other reason than it evokes troubling questions about how providers balance their economic interests against the other interests they serve: their patients, their students, the development of new knowledge, and the needs of the poor and vulnerable.

David Blumenthal '74, MPP is director of the Institute for Health Policy at Massachusetts General Hospital/ Partners Health Care System and is associate professor of medicine and health care policy at Harvard Medical School.

The Pediatric Predicament

by Sharon B. Murphy

MY ASSIGNMENT IS TO REPRESENT THE thoughts of the faculty at a traditional academic medical center charged with preserving its teaching environment in the midst of the many changes taking place in health care today.

I must begin with a disclaimer and disclosure. I disclaim any expertise in medical education. Though I am involved with medical student teaching and training of residents and fellows, and I once successfully completed a residency and fellowship myself, teaching currently occupies only a small fraction of my time. Most of my time is consumed with my duties as section chief of a large program of pediatric hematology and oncology at a children's hospital and by my role as the chair of a NCI-sponsored cancer clinical trials cooperative group. I seriously doubt that my thoughts are representative of faculty at traditional academic medical centers, though the staff physicians and surgeons at our freestanding children's hospital all have faculty appointments at Northwestern University Medical School, and we are a major teaching hospital.

Unlike most academic health centers, those of us in pediatric medical centers face astounding inequities in the funding of graduate medical education (GME). Because children's hospitals do not treat Medicare patients, they do not have the buffer of Medicare's substantial though declining support for GME.

Furthermore, although children's hospitals are relatively few—less than one percent of hospitals—the nation's approximately 60 freestanding children's hospitals train more than five percent of the country's residents, more than 25 percent of all pediatricians, and more than half of all pediatric subspecialists. Our teaching "intensity," measured using a ratio of students or residents to beds, is almost twice as great as programs provided by major teaching hospitals that serve adults. Even though the recently passed Balanced Budget Act of 1997 cuts federal spending for graduate medical training by reforms in the way Medicare reimburses hospitals for GME, freestanding children's hospitals like ours lack any subsidies whatsoever.

Salaries for our 72 pediatric housestaff must come entirely from hospital sources, and housestaff costs are of course only a part of sustaining the cost of the academic mission. The total costs are hard to even ascertain and have to take into account such things as program support staff, additional office and clinical space, conference rooms, inefficiencies and diminished productivity related to the educational experience, and unreimbursed faculty time for teaching and supervision.

Furthermore, medical education is best conducted in an environment that fosters discovery of new biomedical and clinical knowledge—one that provides for and demands ongoing faculty scholarship, and promotes excellence and innovation in patient care. By any estimate then, total educational costs are quite high, and lack of financial support for medical education is by far the greatest threat to the maintenance of student and resident teaching.

While it seems as if my remarks have focused on nothing but cost, the reality is that our hospital, like a great many other academic medical centers, is facing serious financial problems. The burden of the added academic costs places us at a tremendous financial disadvantage in managed care contracting when compared to hospitals without students or residents. We certainly can make the case that academic centers are special and offer higher quality care because of their top ranked faculty, research and teaching programs. But HMOs, IPAs and other third-party payers will choose lower cost community providers whenever possible. No margin, no mission.

Even geography works against academic medical centers like ours, which tend to be located in the heart of a city serving large proportions of poor Medicaid recipients or uninsured patients. Hospitals without teaching programs located in suburbs draw from a pool of relatively affluent families with good health care coverage.

Increasing trends toward managed care, lower cost ambulatory environments, and home care create new pressures to teach in ambulatory settings, and necessitate major changes in traditional hospital-based models of medical education. I am personally uncomfortable managing the complex care of some of my own medical patients through remote home health

agencies via cell phone and fax. The challenge of actually teaching a physician-in-training how to do it is mind boggling.

Most academic programs also lack a critical mass of faculty who can deliver this new curriculum in ambulatory settings. And the quality of teaching and the extent to which we can or should rely on contributed services of community preceptors is a matter of concern requiring further study.

Apart from the difficulties associated with developing effective curricula that help students and residents achieve the competencies needed for managed care practice, a lack of financial support for medical education in the setting of managed care is a big problem. With an increasing amount of residency training time being spent in ambulatory sites, formulas by which Medicare subsidizes GME are rapidly becoming irrelevant.

How are my department and medical center dealing with these threats to our academic mission? Not very effectively, I'd say, or with any particularly original approaches. Of course, last year as our large medical center budget deficit loomed, we engaged a high-priced consultant to come in and conduct an academic cost analysis project. Guess what? The report found that the costs of our academic mission were high and had to come down, and that a steering committee should be established to assess overall financial targets and to determine how best to meet market requirements while still supporting the mission. We hardly needed a consultant to tell us what we already knew. In reality, we rely on philanthropy to make up for our loss from operations.

With all of these seemingly overwhelming financial disincentives and threats to medical education, I want to share with you a deeper, more nagging, personal concern. Changes in the behavior of physicians threaten to diminish their ability to serve as mentors and role models for the next generation of physicians. The climate for teaching and research in once-thriving institutions is deteriorating. Much of our energy is consumed in dealing with diminishing market share, downsizings, forced mergers, productivity expectations, and strong pressures to generate salary offsets from clinical work and/or research grants. Faculties are scrambling, and there is little time available for unreimbursed teaching effort, the quality and quantity of which is difficult to measure anyhow.

The days when the time and effort of teaching can be supported by clinical practice revenues are fast disappearing. And, despite lip service, teaching activities count least in promotion and tenure decisions. Thus I am concerned that the image that academic physicians in clinical departments project to students and residents of today is not a pretty one.

The current generation of students and residents, the so-called Generation X, I think have already concluded that they do not want to be like us, and I fear that we are losing a whole generation of young physician/scientists and medical educators. They are choosing instead primary care and emergency room residencies, motivated perhaps by life style decisions or by watching too many episodes of the television series "ER."

I worry about the time when all the baby boomers like me retire. Where will the medical school faculties of the future come from? Who will be the teachers of tomorrow?

Sharon B. Murphy '69 is the chief of hematology/oncology at Children's Memorial Hospital in Chicago, IL and professor of pediatrics at Northwestern University School of Medicine. She is now also president-elect of the HMS Alumni Council.

A Tribute to Gerald Foster

Gerald S. Foster '51 stepped down as HMS faculty associate dean for admissions, after leading the admissions process here for 15 years and serving on the admissions committee an additional 15 years.

"Jerry Foster has presided over the selection of more HMS students than anyone else in history," said Daniel Federman '53, dean for medical education, at a tribute to Foster during the June 5 Alumni Day program. "He is also responsible as much as anyone else for the high proportion of minority medical students being trained here." Federman presented Foster with a plaque from the Harvard Medical Alumni Association for his distinguished service. It bore the inscription "Qui eligit optime, nos eligit." ("Who chooses best, chooses us.")

Foster also received a tribute at the Alumni Council dinner on June 2. There, Federman quantified Foster's contribution to the medical school: during his 15 years of leadership, there were 50,000 applications, 15,000 interviews, 4,000 acceptances and 3,000 entering students.

At the dinner, Theresa Orr, assistant dean and director of admissions and financial aid, said, "Jerry Foster is one of those people whom every professional should have a chance to work with—a terrific mentor, a great teacher, and an outstanding human being." She said he has unfailing integrity and a "willingness to do what is right even at the risk of criticism." Succeeding Foster will be Jules Dienstag, associate professor of medicine, from the GI Unit at Massachusetts General Hospital.

A Novel Residency

by Anna Berkenblit

BEFORE I BEGIN, I MUST CONFESS that I was terrified when I got a call from Dr. Federman. I feared that something from my past at Harvard Medical School was finally catching up with me. My palms perspired until he told me he was not going to revoke my medical school diploma, but rather to invite me to speak with you today about preserving the environment for medical student and resident education amid the many changes in health care. He asked me to speak from the vantage point of my training in an unusual program—a primary care program based in an HMO.

I've been instructed that "the ideal talk is thoughtful, original, creative, humorous, and twelve minutes." I understand there is a 10 percent withholding on my lunch if I fail to meet this goal. Everyone is managed these days, even speakers at Alumni Day.

I will begin by divulging what drew me to this residency program, which is based in Harvard Vanguard Medical Associates, a major teaching affiliate of HMS. (Harvard Vanguard Medical Associates is the physicians' group affiliated with Harvard Pilgrim Health Care [HPHC]. It was formerly the staff model HMO known as Harvard Community Health Plan [HCHP].) I will conclude by highlighting both the advantages of training within a managed care setting, and the potential pitfalls.

Experiences in medical school and in residency interviews convinced me that the Brigham/HPHC primary care residency was ideal for achieving a well-rounded training in general internal medicine, especially given the current changes in health care. As a medical student I did a primary care rotation at HPHC and worked closely with several clinicians at the Kenmore Center. My appetite for outpatient medicine was whetted and more importantly, I went home at the end of the day thinking, "Gee, I really like these physicians and what they do on a daily basis." Those of us brave enough to peer into our own souls know that many career decisions are made on such subjective grounds. We're drawn to certain fields because we resonate with those who are already in them.

On a more pragmatic level, I realized that physicians upon whom managed care is thrust seem the most unhappy; since it is here to stay, whether I like it or not, I figured that

The Rocky Path to Professionalism

Depression is a common response to the pressures of training that medical students go through. "We need to concentrate more effort on helping those who work with residents to recognize the signs that someone is having difficulty coping," says Alumni Council member Alison May '91. "And then we need to develop and promote more support networks for young physicians who find themselves adrift."

Three of Alison May's classmates committed suicide in the years following graduation. May brought this information to the attention of the Alumni Council and asked what kind of preventive measures the medical school could take. The group came up with the idea for the Path to Professionalization Beyond Medical School—a workshop held during reunion week to address the stresses residents and new professionals face, and venues for alleviating them.

The workshop's facilitator, Dr. Ronald Arky, HMS professor of medicine and master of the Peabody Society, said that the suicides "shocked us into remembering that there is a problem out there." Though suicide is the extreme, he says a fair number of young doctors become depressed and their careers are affected by this. It may be particularly difficult for young adults well acquainted with success to acknowledge that they need help.

May says, "The thinking is this: the fit will survive, and you really want to be one of them." But this can lead to denial or to a lack of clarity about the status of one's own mental health.

Jonathan Borus, chief of psychiatry at Brigham and Women's Hospital, outlined the major emotional hurdles faced by medical students and new residents. Primary is the fact that the majority of doctors in training feel inadequate at times. This is exacerbated by long hours and unrelenting pressures on the job.

I might as well find a program that trains residents within a managed care setting.

When I was applying to residency programs, a senior resident at another program made a comment that stuck with me and influenced my thinking more than I'm sure she ever anticipated. She told me that when she completes her residency in internal medicine, she would be a very, very good...resident. I think she meant that she'd be skilled at taking care of hospitalized patients in an acute setting, running vents and running codes, carrying out orders from attendings, supervising interns, discharging patients, and the like. But I think she recognized that her training was incomplete. She was less ready to become a physician in the community, seeing patients mostly in the office. She had not developed the skills necessary to thrive outside of the hospital.

Some of these skills include:

- recognizing and treating the different range of complaints that patients present to a doctor's office, as opposed to an emergency room,
- practicing cost-effective medicine by working up a patient's complaint sequentially instead of "shot-gun," as is often done in a tertiary care center,
- implementing evidence-based screening in the office, and
- mastering the administrative and financial components of an efficient practice.

One other poignant moment on the interview trail occurred when I asked another resident if he had learned anything about the appropriate use of laboratory tests. He replied something to the effect of, "Oh sure, residency is the time to order lots of tests, you know, to get a feel for them." This stance strikes me as problematic, in terms of both cost and educational value. I should also mention that the federal government is not too keen on such a philosophy either. I chuckle when I order a lab test at the Brigham now. Each time I must "hereby attest to the medical necessity" of the ordered test by signing with my electronic code.

"How do you maintain a healthy, balanced life and at the same time do the job you need to do?" May, an instructor in medicine at HMS and an internist at Brookside Community Health Center, says she hears this question over and over during Patient-Doctor tutorials, and admits that she's wondered the same thing herself. "There's a disincentive to recognize your problems," she adds, "because if you decide to take some time away from the job, your colleagues have to pick up the slack."

"I think there are things about the system that have to change; it doesn't have to be this bad," she continues. "But in the meantime we need to publicize available resources and diminish the stigma that often surrounds their use."

Here are several of the workshop's conclusions:

• Some residency programs have psychiatric support that could be made more visible and available.

• Many residents have difficulty judging their own competence as they progress in their training. They would benefit from regular feedback and by help focusing in the areas in which they need to concentrate their learning.

• Some residents find themselves in residencies that are unduly challenging. This could be ameliorated if alumni assessments of residency programs were made available to students in the application process.

The Alumni Council is developing a system of nonacademic mentorships that they hope will be a significant support to new residents. Information about this opportunity can be found on the Alumni Council website at: http://www.hms.harvard.edu/ alumni/alumni.html

"I was rather taken aback by the intensity of the people at the workshop, and by the consensus that something needs to be done, Arky said. "It was moving to hear how many training programs across the country lack a system to help people with the conflicts that professionals undergo as they move from training to the 'real world'."

Jane Buchbinder

Each of these residents with whom I spoke was in a top-notch program. Each articulated the status quo. Medical students are, in general, a conservative bunch, and so perhaps the status quo was appealing to others who ranked those programs highly.

My program is risky in many ways: it is not set in a traditional academic setting, it lacks the conventional resident clinic, and it breaks an ancient tenet of training—that the hospital is the center of the medical universe. There are only four residents per class and the program, in its present design, is only about five years old.

So, you may wonder, why did I choose it? I took the risk of ranking this program highly because of two factors: the Brigham and the program director, Jan Shorey.

The Brigham has such a long tradition of excellence, I figured it couldn't hurt to train there. Jan Shorey trained at the Brigham and, prior to directing this program, she had already run two other primary care programs in Boston. I had heard the "inside scoop" from a good friend on why Jan had chosen to run the Brigham/HPHC program and I was sold.

The program is so unique that Jan has difficulty explaining it to applicants in 30 minutes, so I'll never be able to do it justice in the 3 minutes I've allotted. Let me focus on four key distinctions from a traditional program: outpatient time, preceptors, seminars and managed care.

Outpatient Time: 65 percent of the three-year residency is devoted to outpatient care. Most other primary care programs get by with 30-35 percent. Internship at the Brigham is essentially identical, but the bulk of the last two years is spent taking care of a panel of outpatients. During the junior and senior years three to four months are spent on the wards, running general medical, oncology and cardiology teams, as well as the intensive and coronary care units.

The program's priority, however, is fostering consistent, longitudinal care of patients—mostly outpatient, but also along the continuum of care, from office to hospital to rehab to home with visiting nurses. This fills the educational void left by shorter and shorter hospital stays. During a two-to-four day hospitalization it is impossible to learn about the natural course of disease and the pace of the healing process.

Preceptors: Each resident is paired with an outpatient preceptor for the full three years. In some ways, this feels like an apprenticeship, in others like a marriage. I was struck in medical school by how transient the professional relationships were. As soon as there was a hint of dysfunction, someone would rotate off service and the problem would never be addressed. This is perfect for the nonconfrontational personality of, dare I say, many of us physicians. By working with a preceptor for three years, residents are introduced early on to a much more realistic professional environment, in which relationships are for the long haul and differences need to be sorted out skillfully.

Another key aspect of the preceptor/resident relationship is the commitment required of both. For example, prior to starting internship I spent time with each of the four potential preceptors to see which one would be the most appropriate for me. I had heard that one of them was interested in increasing his administrative role within the organization and when I asked him how he envisioned protecting some time for precepting, he replied with a pause, "good question..."

Seminars: Seminars are a focal point of our program. In addition to the traditional rounds, resident report, and lunch-time lectures during our inpatient rotations, we do much of our learning in a self-directed seminar format during our outpatient blocks. Psychosocial and epidemiology seminars are high priorities. And to address the other competencies I mentioned before, which might distinguish a practicing physician from a resident, we have seminars in fields such as management and leadership, ethics, and even a systems design course. We identify our learning agenda and teach each other. Sometimes we'll bring in guest speakers, other times we'll critically review a seminal article. Sounds a lot like the "New Pathway," doesn't it? No wonder I feel at home.

Managed care: The managed care environment in which we practice is critical to the success of our program. Managed care is not a single entity.

Over the past eight years I've witnessed several organizational transitions, from HCHP to HPHC to what is now known as Harvard Vanguard Medical Associates. Each of these changes has been made to stay competitive within a market driven by such variables as cost and patient satisfaction.

Regardless, the individual practitioners with whom I've worked and the affiliations that Harvard Vanguard Medical Associates has with hospitals and with extended care facilities are by and large excellent. I have never witnessed an ethical conflict with respect to referring a patient to a second-rate provider because they're the one "in the network." I have never witnessed the denial of appropriate care. With respect to approval for procedures and referrals, I am not training at 1-800-MAY-I.

I should also point out that HPHC is an unusually academic environment for managed care. Between the activities of researchers in the Department of Ambulatory Care and Prevention and of the subspecialists who see patients at Harvard Vanguard Medical Associates and do research at the Brigham, there is a wealth of scholarly activity.

So, reflecting on my experiences thus far, I'd like to propose a few recommendations about the future of training within a managed care setting. My bias, as I am sure you can tell by now, is that training within managed care is feasible, even desirable. Nevertheless, three areas need special attention: patient diversity, funding, and compensation for clinical teachers.

Patient Diversity: By and large many managed care patients are young and healthy. While learning to take care of these patients is an important component of a residency in internal medicine, other patients must be strongly represented in a resident's panel. He or she must graduate feeling comfortable taking care of elderly patients and chronically ill patients from diverse socioeconomic and cultural backgrounds. This requires a tremendous amount of foresight and hard work on the part of the residency director and preceptors, not to mention a certain amount of luck.

Cost: The cost of training can and should be incorporated into a managed care organization's budget. There is a long tradition of the government funding hospital-based residency programs. They accept the fact that education is expensive and until recently they have been willing to reimburse academic medical centers even though the care they provide is, on the whole, more expensive than the care rendered by community hospitals. Similarly, managed care organizations that reap the benefits of medical education should pay their fair share.

Compensation: If clinicians are going to commit to teaching medical students and residents in a managed care environment, they must be rewarded for their efforts. As it stands now, my preceptor, Talia Herman, gets no compensation other than my gratitude for the countless hours she spends thinking about my patients with me, guiding me to the literature and supporting me. The subspecialists with whom residents spend a lot of time receive our thanks and a nice letter from the program. We've created a teaching portfolio for each clinician to document their efforts.

At HMS a committee chaired by Eleanor Shore, with members such as Joseph Dorsey and Thomas Inui, created a new academic part-time faculty ladder for clinicians in the community. Advancement is based on organizational leadership, teaching, research, and publications—each of which is defined much more broadly than in traditional academic tracks. For example, the notion of a publication is broadened to include any educational "disseminatable product." This seems to me like a powerful step in the right direction.

In spite of these concerns which, by the way, are not unique to training within managed care, I hope I have convinced you that managed care provides a wealth of untapped educational opportunities that supplement training in more traditional settings. I hope I have shed light for you on a novel residency program that flourishes, not despite, but rather because of all the changes in health care.

Anna Berkenblit '96 is a medical resident in the Brigham and Women's/Harvard Pilgrim Health Care primary care residency program.

Reunion Reports

60TH

< Irene and Prentiss L. Hyder '33

< David Oakes '68 and friends

IT WAS A PLEASANT GATHERING with not too much woe about the commercialization of our profession. Looking back to college and medical school years, 1930 to 1938, we realized we had it made. True, we and our families had little money but for those eight years we were shielded from the major hardships of the Depression and were immersed in what we enjoyed. Our timing was also perfect to get the rising stars at the Thorndike: Castle, Keefer, Jackson, Spink, Soma Weiss, Thomas Hale Ham, led by the Nobelist George Minot. Fuller Albright was bursting with original concepts at the MGH. At the Brigham were the soon-to-be-famous house staff: Dunphy, Gross, Hartwell Harrison, Richard Warren and the ever-needling young attending Robert Zollinger. The incomparable Hans Zinsser was going strong but even he at 2 PM could not keep Dauchy's books from clattering to the floor.

In practice our luck held. We could still solo and we did not have to check with a mechanical voice from Nowhereland before getting help from a colleague down the hall. Raise a glass to our wives, and teachers Worth Hale and Dorothy Murphy. Attendees were Boger, Campbell, Day, Dee, Yankauer and myself. Those with their still-tolerant wives were Brown, Dimmler, Gellis, Harrington, Jones, Liebman, Moore, Sise and Smith.

Frank J. Lepreau III '38

55TH

1943A

THE 1943A AND 1943B REUNIONS HAVE always been memorable events and the 55th was especially so! The camaraderie, weather and activities were superb.

The reunion started with a clambake at the home of Jim and Sue Jackson in Brookline. It was a perfect June night, spent in the Jackson's yard under a tent. The turnout of 31 members of 1943B was lively and large.

The following day, Friday, was Alumni Day. The morning featured a program on the Quadrangle, providing opportunities of give-and-take with the speakers and the assorted alumni present. The luncheon offered the opportunity for different groups to reassemble and reacquaint themselves with one another.

Friday evening there was a special joint banquet held in the Faculty Room of Building A, preceded by a reception with chamber music played by the HMS Student String Quartet. After dinner and coffee, an informal meeting was called to order by John Hubbell, who read a magnificent sonnet composed by John Nemiah, entitled "In Memoriam." Following this, Don McLean read the list of those member of 1943A deceased since the 50th reunion—then John Hubbell did the same for '43B.

After a moment of silence, we all enjoyed a brief but to-the-point commentary by Robert Glaser concerning the state of medicine today, the privileges and obligations of the "old-timers," and a few predictions for the future. Open discussion ensued, with remarks by Cal Plimpton and others, Bob Vaughan sang "The Way We Were," and Ben Roe started "Jones Jr. High!" Altogether everyone agreed that it was a warm and successful evening.

On Saturday, the finale was held at the home of Bobby and Joe Murray—brunch arranged in conjunction with John and Penny Hubbell. This offered the perfect opportunity to relax and reminisce, and the weather cooperated with a beautifully sunny summer day.

I understand why some persons have an innate distaste for reunions—possibly because of the false camaraderie, possibly because of nostalgia for youth (which has forever passed), possibly for other personal reasons. All of these are understandable. However, from a personal point of view, I have found that reunions represent a maturing relationship through which we can evaluate our lives. Of course, we miss our classmates who are no longer here, but it is all the more incumbent on us to appreciate what we do have.

I am reminded of one of our World War II patients who lost both his hands. His name was Harold Russell. He won an Oscar for the motion picture *The Best Years of Our Lives*. Harold visited our plastic surgical service during World War II and I recall his statement that the turning point in his rehabilitation was concentrating not on what he had lost but what he still possessed. He has certainly made the most of his lifetime ever since.

1943B

I feel that way about reunions. Of course, we have lost certain faculties and energies. We have also lost some dear, dear friends. However, it is most important to concentrate on what we have left and to cherish the future years which can enrich our lives.

As I read and re-read the notes of our reunion booklet, I am touched by John Lloyd's comments, as well as some of the others. We have all had a great time under the aegis of HMS.

Joseph Murray with John Hubbell '43B and Don McLean '43A

50TH

AFTER FIVE DAYS TOGETHER THE members of HMS '48 are anticipating the next gathering—even an interim reunion. Intensive renewal of old friendships undoubtedly led to the most emotionally satisfying reunion the class has enjoyed. Ninety-six classmates, their wives and wives of former classmates, met on Wednesday evening at a reception in the Vanderbilt Hall common room. The expansion of the medical school and hospitals complex amazed those who had been away ten or more years. They commented on the "busyness" of Longwood Avenue and the loss of the corner diner with the pheasants in the backyard brush.

Our group was the last all-male class, storied in the Aesculapian play (now graced by the charming ladies who join us.) Also, we were the only class with an extra three or four months of schooling; this was a result of the shift from the accelerated war program back to the standard schedule, and of the decision by the faculty that these youngsters needed a bit more maturing.

Ultimately, the class produced teachers, caring physicians, professors, deans and researchers—even Dan Tosteson, retired dean of HMS, and Howard Hiatt, former dean of the

45TH

ONE OF THE BEST TURNOUTS (30 percent) for any class this year contributed to the success of our 45th reunion. Close to 60 classmates and family members enjoyed a wonderful three days of renewed friendships and satisfying events.

Thursday will be remembered by the early registrants for the presentation by Hillary Clinton, the eloquent speakers from the Class of 1998, as well as for the moderator role of our own Dan Federman, a job he handled with great skill on Alumni Day. That evening, a superb reception and dinner at the Clubb of Odd Volumes on Beacon Hill was the official start of our reunion. An elegant setting with candlelight, flowers and an outstanding cuisine served on Harvard plates by white-coated waiters will long be remembered.

Friday brought the familiar routine of speeches, lunch under the big tent, the class picture, now with spouses, on the steps of Building A in sunshine and wind. The various symposia on science and medicine, health policy, and medical education changes at HMS provided much informal discussion as well as concern for the delivery of health care in the 21st century.

In the afternoon, we were off for the weekend to the Cliff House in Ogunquit, Maine to enjoy the combination of a comfortable, modern hotel with a spectacular setting overlooking the Atlantic Ocean. There was not a single lobster left at Friday nights' clambake. Saturday was spent exploring the various activities of the resort, walking and shopping around Ogunquit. The day ended with dinner at the Captain's House. We enjoyed the view, conversations, and sports (in so far as the musculo-skeletal systems allow).

Families, especially grandchildren, were a central focus. Bill Temby won the record at the reunion with ten grandchildren! Additional trivia: Bob Hoskins and Wyman Andrus travelled the farthest, coming from the state of Washington; three of the seven women graduates attended with the hope that they would all be there for the next reunion.

Although we thoroughly enjoyed our days together, we remembered and paid tribute to those who were no longer with us, a total of 28, 16 alone dying during the past five years. We also missed those incapacitated and/or ill and wished them well. Many thanks go to the reunion committee with special mention of Jim Peters for his continued labor as class treasurer, Dan Federman for editing the Red Book, Frank Colombo for being impromptu master of ceremonies, as well as the Alumni Office for their support.

This reunion proved to be such a great event that it was unanimously decided to make every effort to return for our 50th, bringing along other classmates, including the 'no shows' since 1953. Until 2003.

Iolanda E. Low '45

Harvard School of Public Health. Two-thirds of the class is retired and, of the retirees, one-half indicate that they continue to serve medicine in some capacity. Their interest in medical matters was shown by their attendance at the HMS alumni program.

Thursday was an active day of scientific and social symposia. The First Lady, Hillary Clinton, spoke to the commencement class, faculty and alumni. The class joined for dinner in the campus Courtyard Cafe. Wine and beer, dinner and post-dinner table-hopping enabled the rekindling of friendships and memories. A spontaneous group of troubadours serenaded the groups with old harmonies.

On Friday morning a brief alumni business meeting preceded the class-gift presentation of $63,304 by John Connolly and Phil Troen. An informative program on medical education followed. The class enjoyed luncheon on the Quadrangle and sat for the class photo. Fifty-seven left for a weekend at Stagecoach Inn in York, Maine. Again old comrades met at dinner Friday evening, breakfast Saturday morning, and explored the countryside and played tennis or golf. A "down east" clambake was the tour de force for the evening. More song and levity brightened the night.

The class warmly acknowledges the personal interest and efficient planning by Nora Nercessian and Jennifer Schmitt of the Alumni Office. All appreciated the extensive undertaking of the class editor, Newt Peabody, in producing a lively and interesting class book. The reunion committee and Ed Gray, treasurer, successfully organized "the best reunion ever."

Jim Bougas '48

40TH

ALTHOUGH THERE WAS OFTEN MUCH fun and many positive experiences, for many of us the memories of HMS/Dental School forty years ago are not always pleasant. The reality that a career as a doctor meant great discipline and long hours was difficult enough; in addition we all had to make serious choices about marriage, finances, places to live, specialties to choose, and how and where we wanted to work. Some of us had unrealistic worries about failure and our ability to do the work.

As brilliant, accomplished and charming as our classmates may have been, so many of our own personal concerns dominated our minds that it was difficult to find the time and energy for friendships and relationships. Maybe finding that time is what reunions are about, after all. As we reach the end of our careers, perhaps this experience will give meaning to our own odyssey as well as renewing common ties and precious memories.

There was a very large turnout—at least 115—for the dinner on Thursday night in Building A under the watchful eyes of ancient professors on the wall. Kathy and Angie Eraklis expertly orchestrated the event attended by wives, husbands, classmates, children and significant others. We were honored by the presence of Elaine Wilde (Larry's wife) and Tina Kister (Sven's wife) as well as Sven's daughter, Karin Howard. We read the names of the other classmates that had passed away and knew if there be spirits they were with us as well.

There was then a general free-for-all of ideas. Our president Joe Burnett led the charge, followed by other old Yalies such as Lew James and John Madden. In the conviviality of it all, some raptured about all the fine people in the class and all the wonderful memories. Others such as Tom Hutchinson made a rational pitch for leaving money in our wills to the old school. We learned from others of Karl Wegner's extraordinary contribution to education in South Dakota. Lots of us made interesting observations and shared ideas. It was generally a very jolly evening indeed.

A number of us then went off for the weekend to The Colony, a grand old hotel in Kennebunkport, Maine. This is the first time the medical school has visited this lovely setting. There were over 65 of us each evening, which represented at least 37 classmates—a great turnout indeed. Joe Foster, a Maine humorist and teacher, entertained us on Friday after dinner. The weather and views were magnificent. On Saturday there were many ways to spend our time. Walks along the beaches and oceanfront gardens, browsing the shops of the town, bicycling to Cape Porpoise, swimming in the heated pool, and trolley rides through town, provided a variety of experiences. Joe Oakley organized a golf tournament, which Rod Starke won.

An ocean sunset provided the perfect background to the lobster cookout on Saturday evening. But it was really just being together, laughing and smoozing, that was the highlight of the weekend. It all came together so well, and it was time to rejoice in the good times we had in those sometimes scary days at HMS. It was as if we had all survived the combat and were home again safely.

On Thursday night I quoted Pete Coggins marvelous preface to the Reunion Book and I shall repeat it here:

"As a student attending HMS Class Day years ago, I remember watching the white-haired group assemble on the steps of Building A for their 40th reunion photos, and thinking that some day we would be them. It seemed impossibly far off. I remember that they seemed cheerful, laughing, with a bit of horseplay. Direct gazes, few furrowed brows.

Now we are them.

And as I read your comments in the reunion notes I am impressed with our positive outlook. (Perhaps more than on our 20th or 30th?) Although we may be distressed by the state of medicine in general, we seem to be enthusiastic about our own life and efforts. In medicine, in administration and teaching or in retirement, we are brimming with ideas and plans.

Life is not bad."

For those from whom we did not hear, we hope "life is not bad" for you as well. We all look forward to number 45.

Tony Patton '58

35TH

THE CLASS OF 1962 CELEBRATED their 35th reunion with a total of 41 classmates returning to the Quadrangle and subsequent festivities. Our reunion started on Wednesday evening and despite the chilly Boston weather, about 60 classmates, wives and one small child gathered at my home in Chestnut Hill for an informal reception. The ambiance was terrific and it appeared that nobody has changed to the point where name tags were truly necessary.

Following the scientific symposia, we dined and danced at the Courtyard Cafe on Thursday evening. Following class exercises and photographs on Friday, some of the group "retired" to the Cliff House in Ogunquit, Maine for an informal and very fun weekend. This was highlighted by a clambake on Saturday evening that fortunately was held indoors since the weather continued to be on the cool side. The highlight of the evening was no speeches and a few jokes from Bill Donahue. The most popular member of the reunion was Bernice Beasley, Palmer's eight-year-old, who won the hearts of everybody and kept everyone on their toes.

We hope everyone will read the Red Book from cover to cover and ignore the one person who is not a member of our class in it. Perhaps this will also inspire you to come back to what we think will be a great 40th reunion in five years. This is another challenge to our antisocial classmates; hopefully at their advanced ages they will have a change of heart (old dogs, new tricks).

Samuel H. Kim '62

30TH

IN ADDITION TO THE GENERIC ALUMNI Week events, several activities were arranged specifically for the Class of 1968. On Thursday there was an architectural history tour of the medical school area and surrounding neighborhood given by Ed Gordon. It was surprising to find how many architectural nuances we failed to notice during our years at HMS. This sobering experience was followed (and corrected) by a cocktail reception held at Building A which was well attended. On Friday, 49 members of the class and their families gathered at the Downtown Harvard Club, where they enjoyed spectacular views from the 38th floor of the Fleet Building, a delicious dinner, and a great deal of reminiscing. Formal reunion activities concluded on Saturday afternoon with a clambake at Steve Pauker's home in Weston. The weather was cool, but the social interactions could not have been warmer. (Thanks to Susan and Steve for making their spacious home and yard available to us for this event!)

In total 66 individuals (classmates, family and friends) participated in one or more of the reunion activities. No one was disappointed.

David D. Oakes '68

25TH

THE HMS CLASS OF '73 RETURNED IN droves to celebrate the last 25th reunion of our lives. We kicked things off with an absolutely marvelous day of symposia, which ran the gamut from basic science to medical politics to personal odysseys. This was followed by a reception at which we all got to unwind and reminisce. Your humble class agent also worked the crowd for a few more bucks for the Class of '73 Scholarship which will soon be a reality. Much thanks to the class for your very generous effort, resulting in $200,000 of donations and pledges. The next day was a combination of schmoozing, looking at Linda Covell-Davis' old photos, and checking out the alumni symposia (starring Eric Larson). We finished off the night with a great dinner at the Bay Tower Room, where wine, memories and laughter flowed freely.

On Saturday, Mike and Pattie Rosenblatt kindly hosted a clambake at their beautiful lakeside home in Newton. I believe we were the first 25th reunion class in many years that was smart enough to avoid the hassle of a trip to Cape Cod. A few Camp HMS tee-shirts were spotted and amazingly, most still fit pretty well. We then parted ways with hearts laden with memories, guts laden with beer and lobster, and a sense that our class and our four years at HMS were something really special. May you all enjoy good times and good health until we meet again at the 30th!

Dick Peinert '73

Class of '73 Symposium: Personal Odysseys

Revolution was in the air when the Harvard Medical School Class of '73 first stepped onto the Quad in 1969. Students were demonstrating over civil rights and the Vietnam War. Martin Luther King and Robert Kennedy had just been assassinated. And, as Jerry Avorn '73 said, "Bill Clinton was in Oxford not inhaling."

For Avorn and other participants of the symposium on June 4, the most radical change since those days has been their decision to go into research rather than to pursue full-time clinical practice. "I must say that in 1969, staying in academic medicine seemed the most unlikely career for me," said Avorn, an associate professor of medicine at BWH, who studies the relationship between the health care system and society.

Classmate Jim Doroshow was even more frank. "If I could have chosen the one person who would not have been speaking about research at our class reunion, it would have been yours truly," said Doroshow, who is director of the Department of Medical Oncology and Therapeutics Research at the City of Hope Cancer Research Center in Los Angeles. With a touch of irony, he told classmates how he was drawn into oncology by his MGH clinical professor, Donald Kaufman. "It was very unusual for any of us to find someone whose career path we wanted to emulate," he said. As part of his clinical oncology training, he spent a few years in a lab where he became interested in cancer-causing free radicals. His interest took him from HMS to NIH and, eventually, to California. "I've been incredibly lucky to focus for over 20 years on just one thing," he said.

Equally surprised by his good fortune was Lee Nadler. Currently professor of medicine at DFCI, Nadler was inspired to go into research by his boyhood reading of Sinclair Lewis's Arrowsmith but was diverted by worldly concerns. "I went to the Dana-Farber for clinical training so I could eventually get to Park Avenue," Nadler said. Enticed by good colleagues and the excitement and success of his research in cancer immunotherapy, he stayed at Dana-Farber, where he is chair of the Department of Adult Oncology. "There is a god or godess at HMS who saw every time I might have taken a wrong turn, and steered me through it." said Nadler.

Misia Landau

20TH

ALTHOUGH ONLY THREE MEMBERS OF HMS '78 showed up for the official reunion photo, a much more robust sample made it to the class parties. Friday night, about 30 came to an informal, indoor/outdoor dinner hosted by Bobbi Isberg at her home in Jamaica Plain. On Saturday afternoon, more than 40 adults and assorted offspring gathered at Roger Pasinski's house in Nahant, stunningly situated on a point overlooking Boston Harbor and the North Shore, to skip stones on the beach, eat burgers, drink beer, climb trees, explore tidal pools and catch up with one another. I didn't talk to everyone, but here a few news items:

Ouri Malliris, a part-time pediatrician in Seattle, made it for her first HMS reunion, probably traveling farthest of any classmate. Helen Cooksey is doing a few hours of outpatient surgery each week in a Los Angeles AIDS clinic and caring for her daughter. David Ho was commencement speaker at MIT, where he shared the podium with President Clinton. Robin Yuan, a plastic surgeon in L.A., has published *Cheer Up—You're Only Half Dead*, a book about midlife crisis. Bob Waldinger has happily made the transition from practice to research on how adults cope with life changes. David Munoz may soon equip nurse practitioners in his geriatrics practice with video cameras so they can consult with him remotely as they make nursing home rounds. Avid cyclist Nancy Rigotti does research on smoking and tobacco policy at MGH, where Mariette Murphy practices adolescent medicine (while raising her adolescent daughter). Vanessa Haygood and husband Vernon Stringer manage to stay married while practicing OB/GYN together in Greensboro, North Carolina.

The HMS '78 children—all, of course, good looking and above average—survived the tree, the rope swing and the beach boulders without fractures. To make up for our poor showing in the official photo, we took a record number of group shots at the picnic, with and without spouses and kids. For the rest of the news, read Bobbi's well edited 20th year report, or better yet, come to the 25th!

Susan Okie '78

15TH

REUNION WEEKEND STARTED SLOWLY, with only a scattered few hearing Hillary Rodham Clinton's address to the HMS/HSDM graduating class on Thursday. For the class picture on Friday, we made a small but enthusiastic showing. Pedro Lopez and family came all the way from California, and Hugh Calkins and Linda Fay traveled halfway up the East Coast.

Attendance was better at Saturday's picnic, graciously hosted by Tony Rosenzweig and Debbie Weinstein '84, with more representation from both near and far. In addition to Pedro, and Linda and Hugh, attendees included Alan d'Andrea, Ben Chaska, Dana Gabuzda, Debbie Geismar, David Keller, Sara Lennox, Shari Nethersole, Debbie O'Driscoll, Peter Rintels and Ann Taylor. Many brought spouses and children who participated in soccer and wiffle ball variations suitable for a wide age range of children (not parents). The weather threatened but ultimately cooperated.

Our memories from more than a decade ago had not quite faded—we still recalled the spirit, if not the lines, of "Medtime for Bonzo." More conversation was devoted toward catching up on activities since graduation, on our growing families, and on future plans. We look forward to seeing many more of us at the 20th and 25th.

Edward Bromfield '83